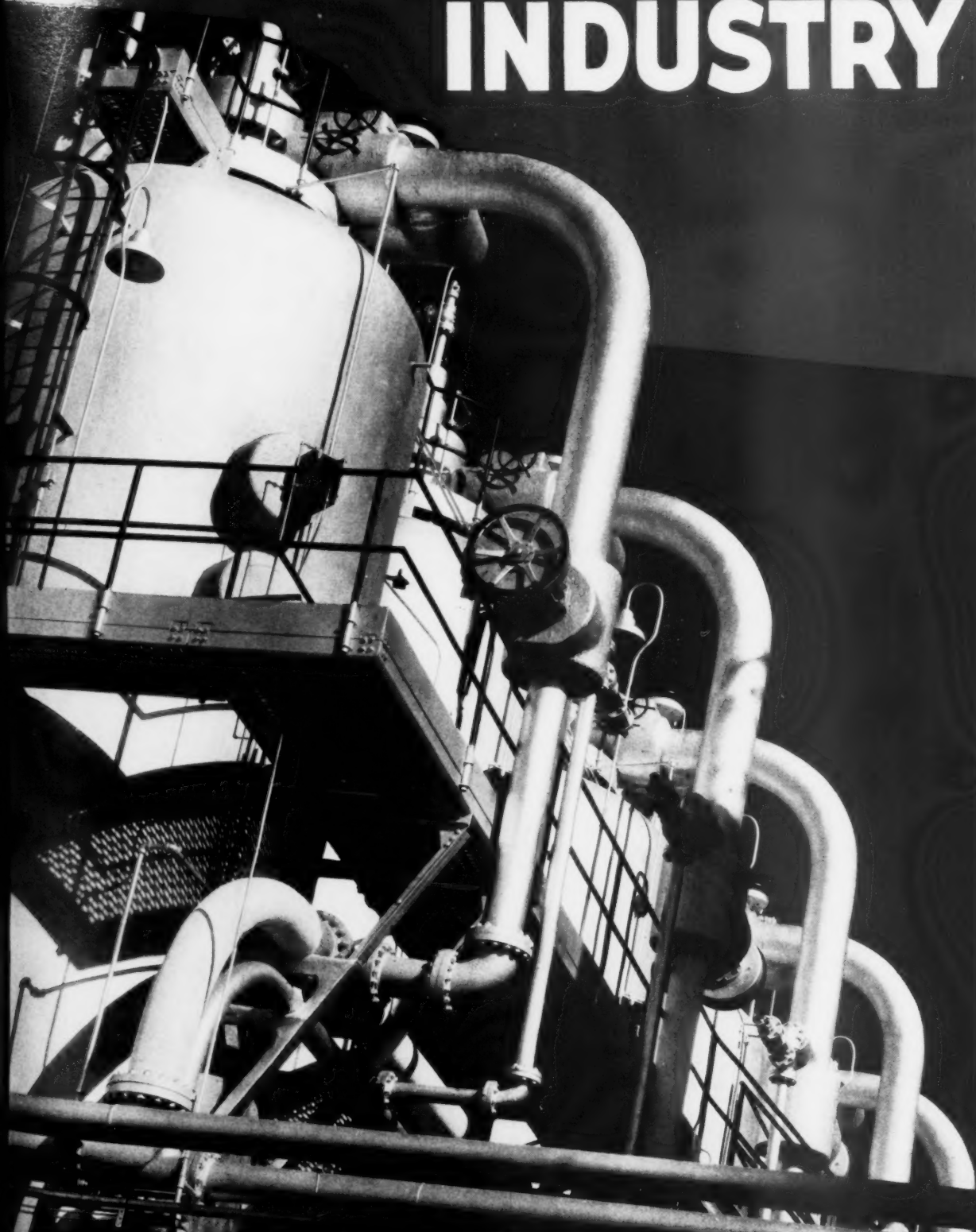


VOLUME VII

NO. 3

# WESTERN INDUSTRY



• Petroleum: Towers and piping layout of propane de-waxing equipment for production of motor oil in a Pacific Coast refinery

Five Cents

March, 1943



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Mr. Secretary-*

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## EDITORIAL COMMENT

(Communications on any subject of interest to our readers are welcomed. If author wishes, his name will not be used. Unsigned contributions will be disregarded.)

### West Must Be on Guard

**"NATURAL BARRIERS . . . Economic Laws . . . Dictate Need for Independent Western Study and Action."**

In view of the brush-off given the West in the set-up of the Committee for Economic Development, which is supposed to be industry's representative in the post-war planning picture, the above title to an article on post-war planning in the November, 1942, issue of *Western Industry* bears emphatic repetition at the present time.

Although the West is building more than half the nation's output of airplanes and merchant ships and is being generally industrialized at a tremendous rate, yet only one of the 17 members of the Board of Trustees of the Committee for Economic Development is from the West. To be sure, that lone Westerner is a good one—Eric Johnston of Spokane, who as president of the United States Chamber of Commerce is doing a magnificent job of pumping new life into that reputedly ossified Chamber—but, even so, to be given a representation of only one-seventeenth is nothing else but a brush-off.

Some critics of our attitude may point out that Paul Hoffman, who is chairman of the Board of Trustees, was in the automobile business in Los Angeles before he went back to Indiana some years ago to become president of the Studebaker Corporation. Even giving Mr. Hoffman the benefit of the doubt and assuming that his thinking is still truly typical of the West only increases the Western representation to two-seventeenths.

Western industrialists cannot afford to trust their post-war fate to thinking that is dominated by the outlook of Washington, New York, or other eastern centers. Their use is summed up in the title quoted above. ". . . Natural Barriers . . . Economic Laws . . . Dictate Need for Independent Western Study and Action." To this might be added "Barriers to West Are Also Mental," the title to an article in our December, 1942, issue pointing out how far Washington is removed from understanding the problems of the West.

### Relatively Simple

**I**N THE production of a modern bi-motor combat airplane, 18,200 parts must be available at a precise time, at a specified location on an assembly or sub-assembly line," said Virgil Gaudette of Lockheed Aircraft Corporation at a recent California State Chamber of Commerce meeting. "These parts are fabricated from 25 different basic materials. In the case of aluminum, there are 15 different basic alloys utilized in seven different tempers or degrees or hardness and there are 34 different sheet sizes in 18 different gauges, with 12 different alloys. These basic materials are procured from 2,700 different agencies whose mills or plants are situated in nearly every state in the union. There are 180 different skills required to build an airplane, not including specialized technical personnel, engineers and pilots. The skilled workers need 50,000 tools, jigs and fixtures made to tolerances of plus or minus five ten-thousandths of an inch to complete one of these combat airplanes." (Editor's Note: Outside of that, the job is relatively simple.)

# WESTERN INDUSTRY

News, Methods, Solutions to Problems of the Principal  
Manufacturing and Processing Industries of the West

## CONTENTS FOR MARCH, 1943

Editorial Comment . . . . .	3
Spotlight on the News . . . . .	9
Air Cargo—Potential Tonnage Preview . . . . .	10-12
Victory Tax High Lights . . . . .	12
Speed-up on Labor Decisions Provided . . . . .	13
Putting the Payroll System in Order . . . . .	14-15
Industrial Forestry Pays Big Returns . . . . .	16-17
Safety Requirements Greater for Women . . . . .	18-19
Housing Conversion Opens Up Business . . . . .	19
Western Industry in Pictures . . . . .	20
Westerners at Work . . . . .	22
Early Start Makes Planning Profitable . . . . .	24-25
Keeping Clean is No Simple Matter . . . . .	26
Washington Correspondence . . . . .	28
Labor and the Industrial West . . . . .	30-31
The West on Its Way . . . . .	33-38
Western Trade Winds . . . . .	39
Yours for the Asking . . . . .	40
The Showcase . . . . .	41-42
Advertisers Index . . . . .	42

### OUR COVER PICTURE

• New de-waxing processes introduced into the oil refining business on the Pacific Coast have contributed greatly to the development of superior lubricating oils. The cover picture shows one of the most modern installations of equipment for this process



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**H**E BELONGS to a large family of wonder workers. They are men of faith who perceive not only the difficulties, but ways to surmount them.

The Oldest Brother of the family is more than 5000 years old.

His business is to destroy—from as far off as he can, as swiftly as he can, while keeping his own as safe as he can. His inventions are marvels of speed and might.

He is now more active than ever before. His name is Military Engineering.

A Younger Brother works on the machines of destruction and in the factories that make them.

He is a youngster, something over a century old. He built the steam engine, machine tools, the internal combustion engine. His name is Me-

chanical Engineering.

He founded this company 50 years ago. Here under the name of Rex Mechanical Engineering—Rex M. E.—his major task now is to provide his Oldest Brother with combat material and means of making it.

As in the years of peace, Rex M. E. still designs . . . manufactures . . . applies . . . sells and maintains chain belts for handling material and transmitting power.

He has work in plenty, not only for the Oldest Brother but for all the great Family of Engineering who serve American industry in war and in peace.

*While working to bring V-Day nearer, Rex M. E. is learning many things that are helpful now—and will be afterwards—for handling materials and transmitting power.*



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BALL BEARING LUBRIPLATE will, by virtue of its outstanding lubrication and protection features, make your ball and roller bearings last longer. LUBRIPLATE is different from any lubricant you ever used. It possesses characteristics not to be found in ordinary lubricants.

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you if you could double or treble the life of your anti-friction bearings—reduce replacement bearing and labor costs—avoid unnecessary production interruptions. That is exactly what scores of manufacturers are accomplishing with BALL BEARING LUBRIPLATE.

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You who use this friendly, long-life wire rope here at home can imagine what it would mean to you. Old side kicks who used to work with you are now in distant parts. If ever dependability counted in wire rope, it's doubly vital there. So when a Wickwire-rigged Liberty Ship gets through to them, and from its cargo unloads this reel with the friendly, trusted name, you can be sure it brings cheers.

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so that more can be spared for new shipping and for *their* heavy work along the fronts.

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First Maritime M and Victory Fleet Flag in all New England was awarded to Wickwire for outstanding production achievements.



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The free book, "Know Your Ropes," tells them just what to expect, and what to look out for. In addition it pictures splicing methods, life-extension rules, etc. This book can save you money—and save wire rope for the war fronts. Send for your free copy.

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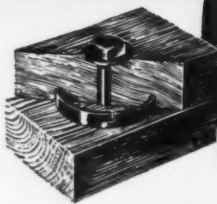
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# Spotlight

## on the NEWS

**WESTERN INDUSTRY**  
**FOR MARCH, 1943**

VOLUME VIII

NUMBER 3

### Events on the Food Front

LAST year and the year before, shortage of industrial materials was the big problem. Now manpower has crowded it out of first place, but already the rationing of some foods indicates that food supply will be the big question to be solved in the future. The Washington correspondent of *Western Industry* has been calling attention to the long-range plans of the government to develop food production on a vast scale, because by the time hostilities stop there will be a world-wide feeding task which only the United States can undertake, not for purely charitable reasons, but only because by this means can real peace be restored.

As our Washington correspondent points out, the largest part of this investment will be in the Western states, because of their possibilities as large-scale food producers. It means, first of all, irrigation systems and land reclamation, but after that industrial activity of various kinds to furnish this vast agricultural establishment with equipment and supplies. Consequently many Western factories may find their future hinged to agriculture.

What has happened so far in the development of dehydrated vegetables does not make big news, but "the big money" is already in the field and the next few months may see important things brought to light.

### Stabilization Not Easy

Stabilization of war workers, so that they cannot change jobs without a "certificate of availability" issued only when the change is in the best interests of the war effort, is a large order. San Francisco Bay shipyards agreed months ago not to hire people away from each other, but a man who wanted to change to a yard where wages were higher said that when he was writing out his application in the employ-

ment room of this yard someone walked around the room and announced loudly, "If you are working for some other yard now, don't put it down, because we don't want to know about it."

If stabilization is to work, more people than the workers themselves will have to be stabilized. At a hearing last month in Los Angeles of the joint committee on agriculture and industry of the California legislature, protests were raised against the action of the commanding officer of the San Bernardino Air Depot for sending out a letter to 32,000 workers in San Bernardino county, offering them better wages and living conditions if they would quit their jobs and take employment at the air depot. A Whittier rancher also testified that representatives of the U. S. Employment Service went through his orange grove with a loudspeaker, luring workers away for war jobs.

### Rails Versus Rubber

Railroads and trucks have been too busy trying to move tonnage to be very active in fighting each other as they used to do before the war. But the plans of the Tonopah & Goldfield Railroad to get government aid for reconstructing its line from Goldfield to Las Vegas may provoke another outburst. To save rubber, magnesium concentrates are now being shipped by rail many hundreds of miles from the Gabbs Valley mine by way of Ogden to the Basic Magnesium refinery near Las Vegas, instead of taking the short cut by highway direct from Luning to Las Vegas. Extending the railroad would eliminate the long trip through Ogden. But the trucking industry may be counted on to fight it vigorously, on the ground that there may be other shortages worse than rubber, such as steel and other materials for the extension of the Tonopah & Goldfield Railroad. If their attack is sufficiently aggressive, they may challenge the existing round-about rail

movement itself with the contention that the saving in locomotives and freight cars would offset the consumption of rubber in an all-truck-haul from Luning to Las Vegas.

### Absence and Presence

Eddie Rickenbacker's suggestion that men from the fighting fronts change off with the workers in the war industries, unpopular as it was in labor circles, went to the heart of the problem of speeding up war production, namely, the difficulty so many people have in visualizing a distant situation. If shells began falling in Pacific Coast shipyards, or there were air raids on aircraft plants, unnecessary absenteeism would disappear. But as it is, North Africa and the Solomons are a long way off and personal pains or pleasures very close at hand.

Some people see it plainly: San Diego business men and college students spent a Sunday last month helping railroad laborers lay new rails and raise tracks used for troop-carrying coaches; similar efforts are being applied at Fresno, Davis and Palo Alto; employees of a Portland bank put in an extra shift every day building small boats; many war plant workers are already voluntarily putting in the 16-hour day that Goebbels is threatening to impose on all German industry. Persuasion has produced results also, such as the merit badges in Seattle for attendance, voluntary pledges, and the attendance charts and other attention-catchers in various big plants.

The first definite industry-wide program to curb absenteeism has been instituted in the lumber industry in the Pacific Northwest, where a labor-management conference called by the War Manpower Commission worked out a plan for having the employer report the absence to the union, which follows up the case. Action is taken in accord with a plan that has been agreed upon by both management and labor.



• Heaviest single shipment made by Pan-American's transpacific cargo department to date is 2,064 pounds for the Navy. Box was stowed on Clipper's passenger lounge deck

# AIR CARGO — Potential Tonnage Preview

War Experience Crams 25 Years of Normal Growth Into Twelve Months and Indicates Vast Movement of Higher Classes of Freight, Express and Mail

THE growth of air cargo has been gradual until the first of this year, especially from the standpoint of carrying large pieces of freight by air. Since we entered fully into the world war, aviation has rushed headlong to such an extent that most experts believe it has crammed 25 years of normal growth into the space of a year. So our ideas and outlooks of a year ago have had to undergo radical changes. This is true in airplane design as well as in airline operations.

Soon after Pearl Harbor it was apparent that supplies, troops, etc., must be moved to combat areas with the least possible delay and also with a minimum amount of losses. So many ocean-going vessels were being lost due to the submarine menace, it was evident that strategic supplies must be transported by air to assure their safe arrival.

Regular air cargo flights became a necessity and from this the rapid advancement of carrying freight by air in large amounts became an actual fact and not just a dream.

Early in 1942 the airlines were asked to release a portion of their equipment to the

By RALPH E. OURSLER  
Lockheed Aircraft Corporation  
Chairman, Statistics and Research Committee  
Air Cargo Research Association

armed forces. Splendid cooperation was displayed by all and practically overnight many of the airlines' luxurious liners were stripped of their comfortable interiors and converted to flying box-cars. Their shiny exterior was replaced with military paint and markings.

Immediately an organization was set up to handle this tremendous operation. Today, right at this moment in fact, a large number of these airplanes, in addition to many new designs recently manufactured for the sole purpose of carrying large loads of freight, are in the air transporting aircraft parts, repair parts, engines, serums, and many other items essential to the war effort.

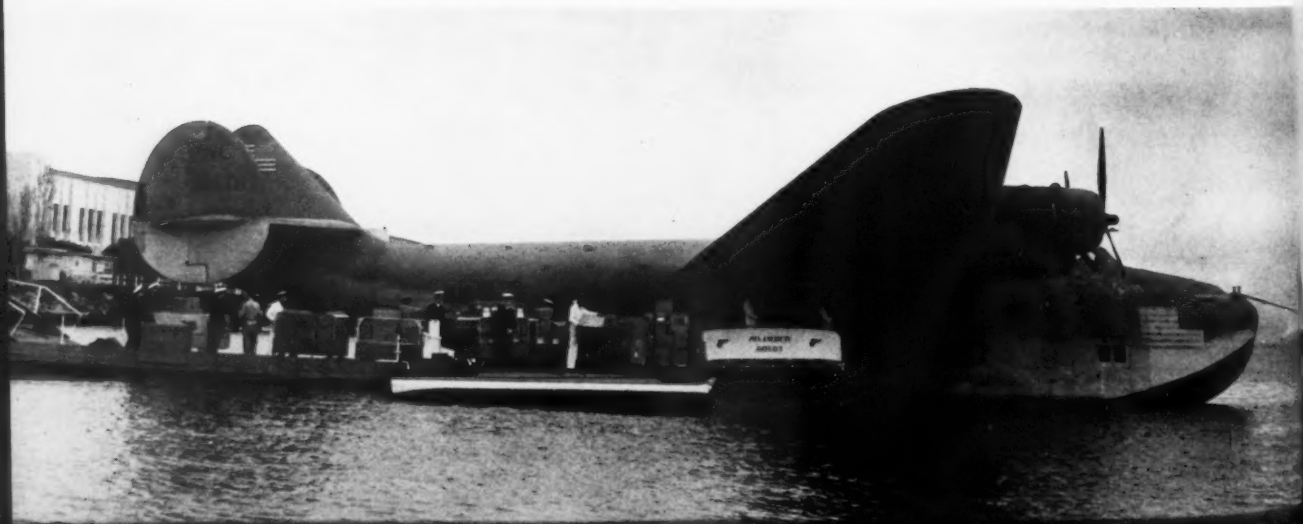
Just as in regular airline operation, there are 10 men on the ground for each airplane in the air to assure mechanical safety, as well as many other important duties that must be performed.

All points of the globe are being touched by the planes now in our military service. Stop and think for a moment about the experience and knowledge our boys are receiving in this operation. The pilots are acquainting themselves with the different terrains, the ground crews are getting acquainted with the people of other countries, and the problems that need attention now, and for peacetime, are being solved.

All of this brings up the opportunities that are available in the air freight field. Keep in mind that an all-out war effort is our first thought. However, when peace is won, we must be prepared for what follows.

Carrying of freight by air is not new. In fact, as far back as 1936 one of the major airlines inaugurated regular air freight service daily between New York and Chicago. Ford tri-motored equipment was used after being stripped of its original passenger carrying interior. The service lasted approximately six months and during this time many large pieces of freight were carried, which included a piano, office furniture, etc.

• This scene of the Pacific Clipper loading cargo indicates the possibilities of the future when all the space is devoted to freight





• Freight carrier of the future. Lockheed Constellation, largest, fastest and most powerful land-based cargo or transport plane

This proved that air freight was practical from the carrying standpoint; however, high rates were necessary and consequently there was not enough volume to keep the service on a paying basis. After the schedule was cancelled all airlines started thinking in terms of future cargo by air and began studies and surveys in this direction.

Today these studies are continuing through the Air Cargo, Inc., a firm sponsored by several airlines. The airlines have pooled their knowledge and finances and all will benefit from the ultimate results. Cooperation of this kind is needed among competitors and is certainly a step in the right direction.

In 1941 Class I railroads originated 1.2 billion tons of freight. Of this amount 684 million tons (55 per cent) constituted coal, ore and other products of mines which, on cost basis, would not be shipped by air.

An additional 189 million tons consisted of products of agriculture, animals and products and forest products which also to a large degree will not be subject to air shipment in the near future. From this latter classification, perishables, fruits, meats, etc., will be eligible for air shipment, and foods generally, particularly if strides are made in dehydration.

The bulk of rail and truck freight which would be subject to air freight competition would be in the field of l.c.l. and

manufacture in 1941 amounted to 354 million tons for Class I roads, or the equivalent of less than 30 per cent of total rail tonnage originated.

Assuming the industry has 1,000 planes of 20-ton capacity devoted entirely to air freight; this would mean an airplane freight capacity of 20,000 tons vs. railroad industry's aggregate box-car capacity of 33 million tons. Truck capacities vary. How-

#### WORLD-WIDE TRANSPORT

A post-war United Nations Investment Corporation, with its first order of business the formation of a network of globe-girdling airways, operated by the United Nations peace force and utilizing for passenger and freight traffic the thousands of transport planes now being constructed, is recommended by Vice-President Henry A. Wallace.

ever, it would probably be in the neighborhood of 20 million tons. The speed factor must, of course, be taken into account; not only will the plane make more and faster trips, but the shipper will probably be willing to pay a premium for speed.

It has been estimated that the volume of domestic air cargo could increase 100 fold and yet capture only 1/10 of 1 per cent of the freight ton miles now carried by American railroads and trucks.

Let us assume that in the next 12 months the strategic cargo required to be exported from the United States will total between 40 and 45 million tons. This reaches a total movement—using airline distances—of approximately 220 billion ton miles. Of this about 20 per cent of the non-military commodities for export is suitable for air cargo. However, I believe it is safe to say that about 50 per cent of the present-day military exports is so suitable.

The airplane potential in the over-all transportation scheme is of a supplemental nature and not one to replace the railroads or the steamships. And the airplane's claim to carry its part of the immense total of tonnage is too sound to be jeopardized by wild claims that it is ready to haul heavy commodities, such as coal and other such products, in times of peace, to all points of the globe.

Certain improvements of our present engine, propeller, and the aerodynamic designs will be developed for more efficient airplane performance, thereby decreasing operating costs. These factors are limited and we should not assume that airplane operating costs will be lowered to the extent that the carriers can expect to compete with the lower classes of materials.

The l.c.l. freight rate averages approximately 4 cents a ton mile. This traffic

• Air shipments must come to the field for loading regardless of volume. Just the opposite of rail and truck hauling. (Douglas plane)





amounted to around 18 million tons carried on the Class I railroads in 1941. This is 1½ per cent of the total freight carried and represents about 2,000 times as much as the total air express carried by all domestic airlines in 1941. It would take 620 airplanes with a payload of 16 tons each traveling at 250 miles an hour to move 18 million tons of l.c.l. freight. That is assuming that the airplane is flown 3650 hours per year. This of course does not include rail express or mail.

From these statistics it would seem that the higher classes of freight, express and mail hold the largest market for future operators of air freight service. This is especially true if a large air freighter is built that can be operated for 10 cents per ton mile. Undoubtedly there are several on drawing paper at the present time awaiting only the war's end to be put into actual production.

The speed factor alone plays a major role in determining per mile costs. As an example, the speed ratio of the pre-war air-

plane was an average of 160 miles per hour in contrast to the average ground transportation speed of about 40 miles per hour. One could make four 100-mile trips to one for a surface unit. This is a definite factor in reducing per mile costs. Today we are seeing this 4 to 1 speed ratio increased to 7 to 1 with the development of faster airplanes, carrying heavier loads and flying greater non-stop distances.

After peace has been won, transportation companies will again depend upon the commercial market for the largest amount of their business.

The knowledge that has been learned by the air carriers during the war will permit them to reach out into new fields and enjoy new markets. Air routes will cover the globe and it isn't being optimistic to expect first class mail, passengers and freight to be carried to all points on the globe daily by air. It seems more of a reality now than ever before since London is just an overnight trip by air. In fact, it will be possible to reach any city on the continent of Europe in less than 24 hours. Hourly

departures are expected between New York and London.

In the not too distant future it is anticipated that there will be more travel between New York and London than between New York and Chicago. Rio will be 24 hours away from the United States, Capetown 36 hours, China 24, Brisbane less than 48. Virtually every important city in this world of two billion people will be accessible within 48 hours.

All of this has been made possible by air transportation, and with the new and larger airplanes that will be available, we can well expect to see flying box-cars overhead almost as frequently as automobiles passing along the street. They will be loaded with freight destined to points on the other side of the world. I do not mean by this that railroads and steamships will be standing idle. Definitely not; in fact, both will be doing a large business in transporting a huge volume of bulk cargoes.

The shipping public will be provided with the best service ever known. They certainly deserve it.

## VICTORY TAX HIGH LIGHTS

(Prepared for Western Industry by Harold J. Berliner, Collector of Internal Revenue, San Francisco)

**E**VERY employer is required to withhold, collect and pay upon all wages and other remuneration of every employee a tax of 5 per cent on all earnings in excess of \$624.00 a year or \$12.00 per week.

Returns on the Victory Tax are to be filed quarterly with the Collector of Internal Revenue in the district in which the principal office of the firm or concern making the return are located.

The employer is also required to furnish the employee a yearly statement of the tax deducted and paid to the Internal Revenue. When an employee terminates his employment before the close of the year, the employer must furnish him with a statement of the amount of Victory Tax paid within 30 days after the termination of such employment.

For the employer a table of deductions setting forth the amounts of tax due the government has been prepared by the Internal Revenue. He may use this table in making up his return or pay on the actual amount of wages an employee receives.

In the computation of the amount of Victory Tax to be withheld from wage payments a deduction is allowable against the wages paid for each pay-roll period based upon an annual deduction of \$624 prorated in accordance with the length of the particular pay-roll period. Under the schedule provided in the Act, the

amount of the deduction is determined as follows:

Payroll Period	Withholding Deduction
Weekly .....	\$12.00
Bi-weekly .....	24.00
Semi-monthly .....	26.00
Monthly .....	52.00
Quarterly .....	156.00
Semi-annually .....	312.00
Annually .....	624.00

If the pay-roll period is less than one week, as in the case where employees are paid daily, the amount of tax withheld will be based upon the excess of the aggregate of the wages paid during the period of a calendar week over the deduction which would be allowed for a weekly pay-roll period. For instance, if an employee is paid daily at the rate of \$5 per day, no tax shall be withheld with respect to the wages paid for the first two days of employment in the week. The wages for the third day will be subject to withholding on \$3, the excess of the total wages for three days (\$15) over the weekly deduction (\$12). On subsequent wage payments the same calendar week, 5 per cent would be withheld. During the following, and subsequent weeks the same procedure would apply.

If the pay-roll period is greater than one week, and is a period not covered by the schedule, the withholding deduction for each such payment is measured by the amount of annual deduction divided by 365 (\$1.71) and multiplied by the total number of calendar days in the period. Thus, the withholding deduction for a pay-roll period of 10 days would be \$17.10.

List of exempt payments:

- For services performed as a member of the military or naval forces of the United States, other than ensigns and retired pay.
- For agricultural labor.
- For domestic service in a private home, local college club, or local chapter of a college fraternity or sorority.
- For casual labor not in the course of the employer's trade or business.
- For services as an employee of a non-resident alien individual foreign partnership, or foreign corporation, if such individual, partnership, or corporation is not engaged in trade or business in the United States.
- For services as an employee of a foreign government or a wholly owned instrumentality thereof.
- For services performed as an employee while outside the United States during the major part of the year, or
- As fees (but not salaries) to a public official.

The first return on the Victory Tax will be due for the quarter ending March 31, 1943, and must be filed not later than April 30, 1943. In the case of most employers who are on the employment tax mailing list of the Collector of Internal Revenue in their district Return Form V-1 will be received through the mail. If the return is not received through the mail employers should address the Collector of Internal Revenue for the district, requesting Form V-1, Return of Victory Tax Withheld.

At the end of the fourth quarter of the year, the return must be accompanied by duplicates of all statements of Victory Tax withheld, issued during the year together with a reconciliation of quarterly returns of Victory Tax withheld.



# Speed-Up On Labor Decisions Provided

**Q**UICK action on wage adjustment cases, ending the grievously long delays by having them settled at Washington, is at hand for Western states, as a result of the setting up of a tripartite Regional War Labor Board for California, Arizona, and Nevada, which will also function for Oregon and Washington until a Board can be set up for those states.

Thomas Fair Neblett, San Francisco, who has been the Regional Director of the War Labor Board, was named full time chairman. The other public members named are:

Arthur C. Miller, regional attorney, Federal Security Agency, San Francisco, full time vice-chairman; Professor Paul Dodd, University of California at Los Angeles, full time vice-chairman to serve in Southern California; Judge M. C. Sloss, attorney, San Francisco, part time public member; and Marion R. Kirkwood, Dean of Stanford University Law School, part time public member.

The employer members and alternates are as follows:

Fred L. Annable, San Diego; George O. Bahrs, General Counsel of San Francisco Employers Council, San Francisco; E. B. Field, realtor, Oakland; F. B. Ortman, president of Gladding, McBean and Company, Los Angeles; Paul Shoup, president of Merchants & Manufacturers Association, Los Angeles; Thomas J. Straub, attorney, Pacific Gas & Electric Company, San Francisco; Harold W. Tuttle, general manager of Howard Automobile Company, Los Angeles; W. B. Tyler, vice president of California & Hawaiian Sugar Refining Corporation, San Francisco.

The labor members and alternates are as follows:

Eugene Paton, International Longshoremen's and Warehousemen's Union, CIO, San Francisco; Lew Michener, regional director of United

Automobile Workers, CIO, Los Angeles; Chris T. Lehman, American Federation of Labor, Los Angeles; Dan Flanagan, western representative of American Federation of Labor, San Francisco; Arnold Campo, United Steelworkers of America, CIO, Oakland; Herbert H. Wilson, United Rubber Workers of America, CIO, Los Angeles; Henry Hayden, business manager of International Brotherhood of Electrical Workers, AFL, Las Vegas, Nevada.

**DISPUTE CASES**—The procedure as described by Chairman Neblett is as follows:

- 1) The employer and the union having a contract should discuss directly the terms of the contract as applied to the dispute at issue.
- 2) If they have none they should undertake to negotiate between themselves directly an agreement.
- 3) Failing a settlement in either case, they should call in a conciliator.
- 4) Failing conciliation they should have the conciliator certify the case to the War Labor Board.
- 5) The Regional War Labor Board will then set up a panel to hear the case.
- 6) The panel will make a recommendation to the Regional War Labor Board which will decide and issue a directive order.

"The board, of course, cannot hasten settlement in disputes until it is asked to establish the Dispute Panel. At that time, however, we are prepared to give a hearing within 10 days at or near the scene of dispute. Upon the recommendation of the panel, the board shall make every effort to decide and issue its directive order on the disputed case within one week."

Chairman Neblett announced that the greatest source of delay in handling voluntary wage adjustment applications has been the lack of complete information on the

wage history of the applicant and its relationship to the community and similar establishments. The Bureau of Labor Statistics, employer organizations and unions are cooperating with the War Labor Board in assembling industry-wide facts, which permit the board to act without danger of inadvertently creating inequities within communities in the course of adjusting claimed maladjustments or supposed inequities. Both unions and employers have been urged by the board to present their applications, either jointly or individually, with as full information on prevailing wages as possible.

**VOLUNTARY APPLICATIONS**—The procedure to be followed is as follows:

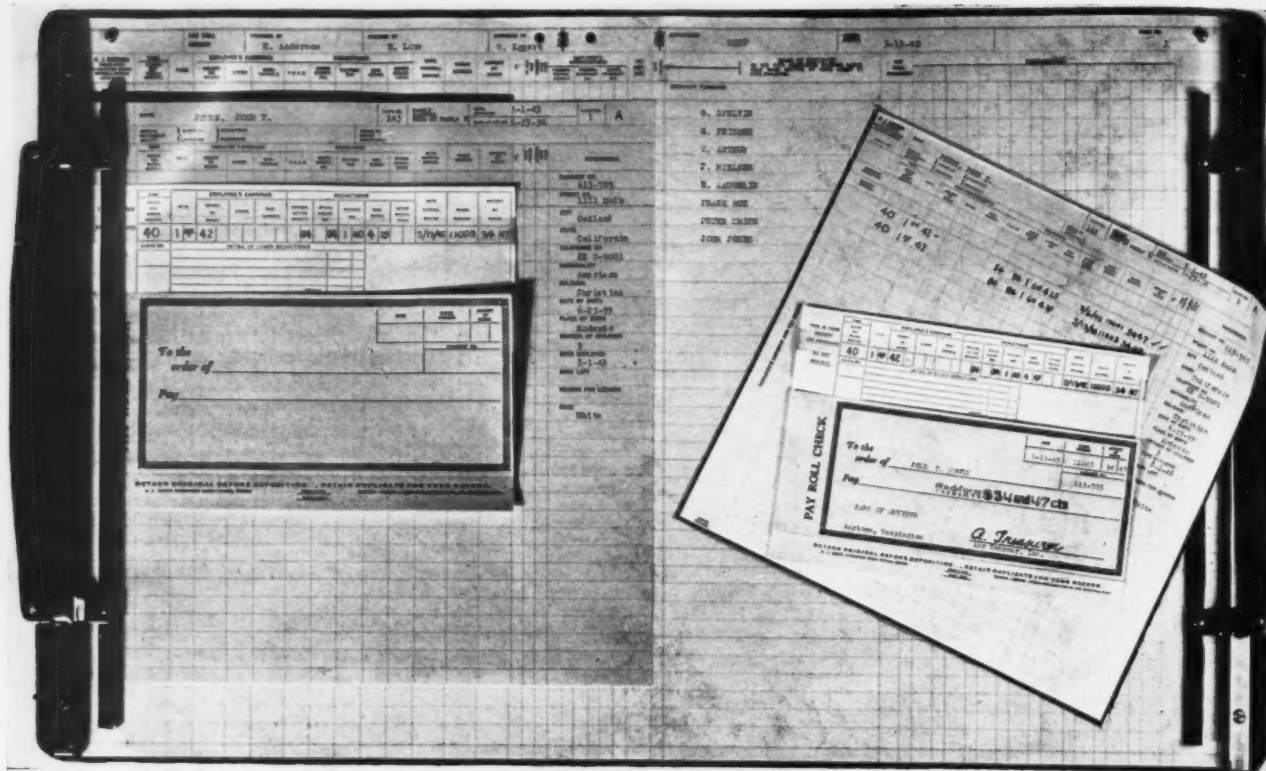
- 1) As approval of the WLB may not be necessary, the employer should go to the Wage and Hour Division of the Department of Labor, local office, and get a ruling whether or not he has to get approval.
- 2) If he must have approval, he may apply to the Regional Labor Board for reversal or file Form No. 10, Form Ten, issued by the WLB, is titled "Application for Approval of a Voluntary or Agreed-upon Wage or Salary Adjustment."
- 3) After filling out Form Ten, it should be filed with the Wage and Hour Division, which will transmit it to the Regional War Labor Board.
- 4) The case as presented will be analyzed and ruled on by the Director of Wage Stabilization.
- 5) The party may appeal from the Director of Wage Stabilization to the Regional WLB. Employers who seek approval of WLB should indicate which of the four conditions they wish to correct.

WLB will permit increases under four conditions:

- 1) Maladjustment, where wages have not increased 15 per cent since January 1, 1941.
- 2) Correction of inequalities or inequities by removing any differentials in rates as between individuals and groups doing the same work.
- 3) Substandards of living.
- 4) Aid the effective prosecution of the war.

• Regional WLB members. Left to right, around the table: Tuttle, Shoup, Tyler, Field, Bahrs, Straub, Kirkwood, Sloss, Neblett, Miller, Paton, Campo, Flanagan, Lehman, Wilson.





• For hand-written payrolls, the Carson system records typical data in one writing. Inset shows employees' record card and the check after completion

# Putting the Payroll System in Order...

**S**ERIOUS work stoppages in key war plants because workers claim their checks are not ready on time, are indicating to observant western industrialists the dangers of inadequate payroll systems.

Many of these executives are beginning to look for better methods of meeting difficulties presented by more workers to be paid through already overburdened equipment, and by the calculating, recording, and reporting of Victory tax (along with other payroll deductions).

Some of them, who have yet to revise their methods of payment to simplify social security deductions, are frankly desperate in their search for improved systems. The principal effect of this frantic scramble has been the greatest forward strides in payroll technique in recent industrial history.

Take the case of a medium-sized northwestern contractor who ordinarily employed 200 workers. His payroll skyrocketed by the addition of 800 men, whom he needed to complete a single large order, this contractor faced two additional problems. One of them was a requirement that all of his workers be paid weekly. The

By A. H. SCHWEGEL\*

other, which utterly disrupted his payroll system, was the necessity of supplying a government auditor with a copy of each check, signed by the individual employee who received it.

He had been using a four-part check printed four on a page. These checks were padded in sets of 50. Each part of each set had to be torn from the pad before the check could be written. Carbons had to be inserted between each part. The sets had to be jogged into register. They had to be placed carefully into the typewriter.

When four checks had been written, the carbons had to be extracted and the parts separated. This multiplication of labor managed to handle a payroll of 200, but its maximum potential, even with the help of considerable overtime if checks were to be ready for distribution on the following day, was 250 for the allotted one-day period.

The contractor was unable to get more office help to handle his quadrupled pay-

roll. So he turned to a continuous interleaved payroll check. The result: a 220 per cent increase in output!

Here's how he did it: he eliminated insertion of carbons and joggling of forms by ordering his checks in continuous flat packs, which fed into his typewriters automatically, and by ordering them with one-time carbons *already inserted*. (Some firms have achieved similar satisfactory results by using a patented carbon-shifting device with continuous checks. Although carbon-shift methods involve a short extra motion, they have the advantage of lower cost. With either method the typist or machine operator eliminates all preparatory motions.)

The five parts of his payroll check the contractor had distributed as follows: after the check itself was signed, he sent the first three parts to his paymaster, the check and duplicate (statement of earnings and deductions) to go to the employee; the triplicate, when signed by the employee, was sent to the federal auditor. The quadruplicate he retained for his own numerical (check

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register) file and the quintuplicate for his alphabetical file.

Weekly time-slips filled out by time-keepers on the job provide the basis for the payroll. His payroll journal is made up from the fourth copy on the day after checks are issued. Quarterly and annual reports are compiled from the quintuplicates, which are filed weekly, by employee, in manila jackets printed on the outside with employee's earnings detail. A special fastener is run through this jacket and the quintuplicate checks are attached to the inside through extra punch holes on each.

Not all payroll problems are the result of suddenly pyramiding personnel, however. When industry had no deductions to figure, payrolls were as simple as signing checks. Now, every employer is faced with the necessity of getting numerous entries onto each check. He must include: the period covered by the check, the name of the employee, amount of his gross earnings, amount of social security tax deducted, Victory tax, State (in California) Unemployment Insurance deduction, other deductions, net earnings (amount of check) and the company name and address.

He may include almost a hundred other items. Some of the more common deductions are for group insurance, donations, union dues, merchandise advances, War Bonds, Red Cross, War Chest, pensions, credit unions, breakage, uniforms. Possible additions are mileage, adjusted compensation, commissions, premiums, dividends.

Other data, much of which is desirable in most industries, may include hours, clock number, straight time, overtime, rates, department, shift, codes and piecework. A recent study showed a total of 89 entries that could be made on a payroll check. The desideratum, of course, is to cut these items to a minimum without sacrificing any essential data.

The time consumed in preparing payrolls by most handwritten methods can be considerably shortened. Here small concerns find difficulty in transferring multiple entries from time-slip to check, from check to individual employee record, from employee record to payroll journal, and in addition supplying the required employee's statement of earnings and deductions. Collating these data so that entries are made on all copies at a single writing is the achievement of an Emeryville systems engineer, A. J. Carson, now manager of Grove Regulator Co.

The Carson Payroll System, now in use by a number of smaller Coast businesses and industries, uses as its base a specially designed clip-board which holds the payroll journal sheet. Checks, employee's statements and individual employee's records are all collated with the ruled columns of the ledger sheet. The original entries carbonize through onto all parts and the complete record is made at one writing. Hand or machine may be used to write the actual check from there on. But "payroll figuring" has been made at least three times faster and much more accurate.

Quarterly and annual summaries under the Carson system are simplified by the individual employee's record sheet. Here all information is accumulated, with space for entering the summaries themselves. Annual payroll reports are consequently available on extremely short notice.

The same thing is substantially true of three-on speediset checks, also used with a great deal of success by smaller industries, in which two or three copies of each check are made by means of carbon between the sheets, and three checks are written on a single sheet. This system also eliminates carbon handling and provides the necessary extra copies. It is accompanied by a

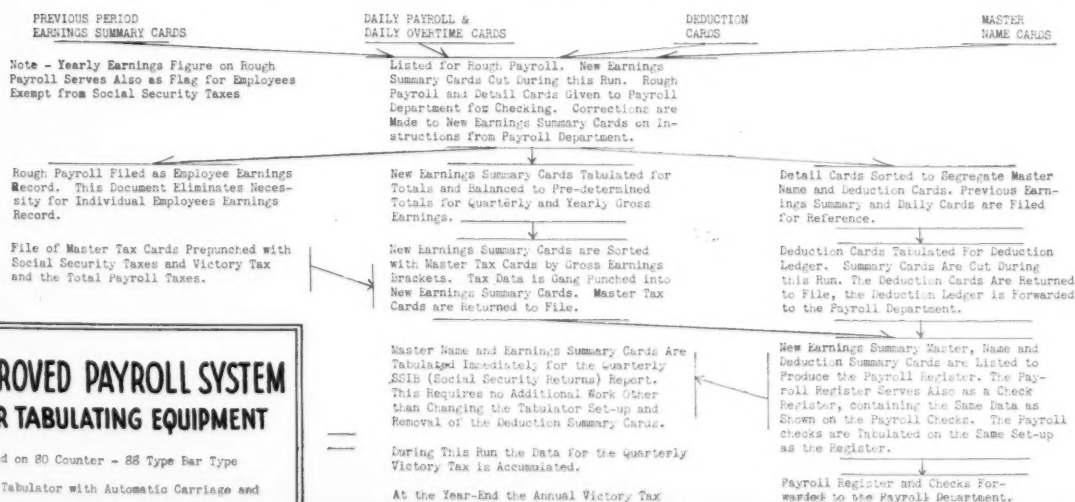


• Continuous interleaved payroll check in operation. Feeding from flat pack into typewriter, checks inserted only once for every thousand. No preliminary motions

special folder for quarterly and annual summaries, covering a four-year period.

These methods are satisfactory for smaller industrialists and for firms where less complicated business machines are in operation. Where tabulating equipment replaces other methods, procedures must be changed to make full use of the added capacity. The method shown in the accompanying chart has proved eminently satisfactory under somewhat difficult conditions, and may serve as a working model for tabulating operators. It is a condensed and simplified system of payroll accounting by machine methods, which fully satisfies government regulations and speeds up the preparation of the current payroll.

\*Business Systems Divisions, Pacific Manifolding Book Co., Emeryville, California.



## IMPROVED PAYROLL SYSTEM FOR TABULATING EQUIPMENT

Based on 80 Counter - 88 Type Bar Type  
40% Tabulator with Automatic Carriage and  
Type 517 Gang Summary Punch.  
Basic Principles of this Procedure are  
Suitable for Most Tabulating Installations.





• Back-pack pumps used by forest crews for small spot fires caused by brands thrown from the main blaze

# Industrial Forestry Produces Big Returns

**I**NDUSTRIAL forestry—the growing, protecting, harvesting, manufacturing and marketing of forest crops along orderly lines—has come of age in the Douglas fir region of western Washington and Oregon, despite the war-time pressure for production and all the accompanying difficulties that have had to be faced.

Growing from forest-fire associations formed by private forest land owners 40 years ago, industrial forestry on the West Coast now includes a cooperative nursery that produces five million seedlings a year for planting on industry lands, the organization of 20 "Tree Farms" with a total of 1,800,000 acres, voluntary codes of forest practice for reseeding of cutovers, expenditure of \$2,000,000 a year on control of fire hazard, and other measures.

On large properties it was customary in the past to turn over anywhere from 20

By W. D. HAGENSTEIN  
Forest Engineer, West Coast Lumbermen's  
Association and Pacific Northwest  
Loggers Association

to 100,000 acres of cutover land in all stages of restocking and nonrestocking to the industrial forester and challenge him to grow trees on those acres economically.

In some cases there were considerable areas nonstocked with little hope of getting any natural reproduction in a reasonable length of time, because of the great distance to the nearest seed source, if any. And there was no source of seedling stock to plant up the idle land, because every public forest tree nursery was obliged by law, either to use its stock for planting on public lands or to sell it to farmers for their use.

This was an embarrassing and pathetic position in which the young forester found himself. A solution dawned on the horizon when several private foresters put their heads together and determined that to reduce this malady they would have to sell a bill of forest economics to their employer.

This was done by drawing up a simple table showing the value of reproduction of different ages, with various densities of stocking and carrying charges as reflected by the replacement cost. Another tabulation employing the available normal yield tables reduced for stocking and for estimated fire losses was presented as a basis for calculating the cost of growing timber on different sites for different rotations.

These tables drove a cold financial shaft home to the thinking processes of management. They proved beyond doubt that it is

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costly to plant cutover land, that companies holding cutover land could not afford to risk losing natural reproduction by failing to supply adequate fire protection, and that industrial foresters should be given authority to plan the logging in advance of felling, so that as much natural restocking as possible could be gained.

The net result of these proven facts has been the setting during the past two years by several companies of the Douglas fir region, of the heartening precedent which gives their foresters authority: (1) to plan cutting in virgin timber; (2) to organize a system of modern mechanized fire protection; and (3) to supplement natural restocking where necessary by planting. This marks a very important milestone in the forest history of industrial ownership.

There are now twenty Washington and Oregon forest properties with an area of nearly 1,900,000 acres, half of which is

types, fire hazards, restocking, site quality, and other items pertinent to the institution of industrial forest management with its integrals of intensive fire protection, planting, and cutting practices. Surveys are in progress on the balance of the area of this large private forestry enterprise.

Every forester knows full well that fire is the major impediment to obtaining restocking in this region. He knows in addi-



• Nisqually Tree Nursery, Nisqually, Wash.

tion that continuous headway has been made in forest protection by all agencies, but that the desired objective of a minimum acreage burned over annually has not been obtained on a region-wide basis.

Intensive protection as an aid to the attainment of the objective of fire control has been exemplified during the past two years on some of these progressive properties. It consists primarily in the development of a supplemental organization to augment the existing private and public organizations charged with the responsibility of protecting private land.

In a sense, these supplemental organizations are a form of private patrol whose principal activities are building and maintaining private lookouts, constructing and maintaining fire protection roads, and de-

veloping water facilities for use in attack on fires.

Adopting water as their best facility, most of the operations are equipped with tank trucks, having power pumps and other fire-fighting tools, for motorized attack on fires. These trucks, using well-graded truck roads constructed for protection and harvesting, either as new roads or as converted railroad grades, can reach critical areas rapidly after detection of fires. The supplemental protection forces are contributing greatly toward keeping the burned-over acreage small because the constant presence of men on critical areas has stimulated fire prevention.

Short-wave radio has made its appearance in the private supplemental protection organizations and is proving its worth in keeping detection and suppression units in constant communication with one another. This allows standby suppression crews to



• Seedling evergreens at the nursery which is sponsored jointly by West Coast Lumbermen's Assn. and Pacific N.W. Loggers Assn.

be engaged during fire weather in important field work such as hazard reduction, truck trail construction, water development or other work incidental to fireproofing a property and still be instantly available in case of fire.

One conservative estimate of the cost of instituting intensive protection, based on the volume produced for a fifty-year rotation, indicates that the cost per thousand board feet log scale is only 35 cents.



• Weyerhaeuser's fire patrol and equipment at 150,000-acre Clemons Tree Farm owned jointly by the company, county and state

old-growth timber, where commercial forestry is being practiced under the control of thirty-eight technically-trained foresters.

Under their guidance systematic inventories and surveys have been made on over a million of these acres to determine timber

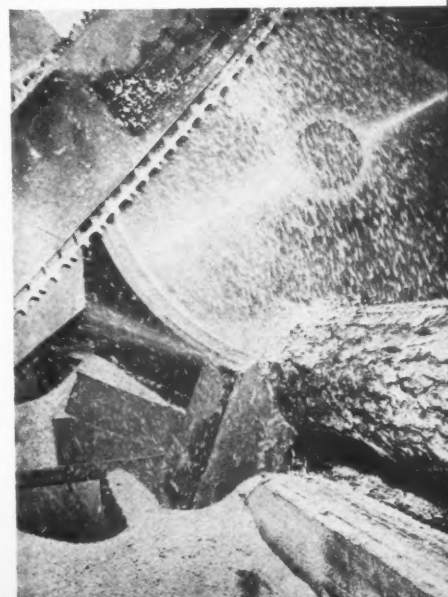
## Lumber Industry Holds Its Own

HOW can the record-breaking pace of lumber production be continued in the face of an overtaxed source of skilled or unskilled labor? Is it the general policy of the OPA to hold lumber prices to present levels or will it advance prices generally? What about allocation of logs and the contribution and distribution of the production of the small mill? Is there any hope that skilled men drafted by the army from logging camps and mills may be released? Why hasn't the lumber industry been given an E award?

The foregoing questions were given a pretty thorough workout at the annual stockholders' meeting of the West Coast Lumbermen's Association in Tacoma on January 29, when its members met with representatives of governmental agencies to stage a "log rolling contest" on current

mutual problems. Additional requirements expected from the industry were outlined by Harold E. Holman, Fred H. Brundage, and George B. Carpenter of the War Production Board, and representatives of the Office of Price Administration and the War Manpower Commission were pretty well able to satisfactorily answer the questions that are perplexities of the moment to lumbermen.

Yet, with all of the problems due to manpower and equipment shortages, it was reported that the industry's contribution to the war effort set a new high record in production in 1942 with a total of 8,750,000,000 board feet of lumber. Its weekly production last year was 1.3 per cent above that of the previous year, and 20 per cent more than in 1940.



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# Safety Requirements Greater For Women

**H**ELP! More help! Send me replacements for this mechanic or operator, for this or that machine! This has been the cry of almost every supervisor and foreman in industry for the past year.

Needless to say, the supply of young, healthy male industrial workers has been exhausted for some time so we find ourselves using women, the only other available human supply to fill our needs for more help to keep up with our ever-increasing production schedules.

It has been almost impossible to employ industrially trained women in western industry, for in past years we have used a very limited number of women workers in our industries. In hiring male employees, it was impossible to find a man that had never used a monkey wrench or a pair of pliers some time in his life. However, we find the reverse to be true with women. It is hard to find one who ever has used mechanical tools.

I point this out to show you that the educational program used for training men is not adequate for training women. It is necessary to start at a much lower point, whether training for production or safety.

In line with the demand for an intensified educational program for women industrial workers, the Douglas Aircraft Company has just completed the filming of a 16 mm. sound safety film which will be shown to all new employees as they are hired.

This method of educating the new employee, even before he starts to work, gives the Safety Engineer a chance to emphasize the necessity for working safely. As the new employee watches the picture, he is



By W.M. S. RHODES  
Chief Safety Engineer  
Douglas Aircraft Company, Inc.

shown the wrong and the right way to do his job, and is reminded vividly of the price he surely must pay if safety rules are not followed.

Since we are covering safety in this article, we will try to omit the many production problems, even though it is almost impossible to separate the two, for it has been proved that production without safety is inefficient and costly.

In the use of women in industry, we are faced with many plant and production method changes to insure the safety and health of our women workers. Some have been increased number and size of rest rooms with matrons in attendance, posture chairs, floor mats, skin creams for the prevention of dermatitis, rest and smoke periods, and so on. It has been necessary to counter-weight some of the heavy portable tools so that they can be handled with ease by women.

Also, because women's hands are not as tough and calloused as men's, it has been necessary to supply thousands of specially designed tight-fitting leather gloves. More aprons of treated canvas also have been furnished for protection. The design of special sizes of protective equipment for women was necessary; such as, cartridge respirators, eye shields, toe guards and safety shoes.

Machine guarding always has been a prerequisite for good safety. Even this has been extended more to adequately protect women. For example, punch presses being operated by women in the Douglas Aircraft Company have been provided with two-handed controls so that both hands must be used to trip the machine, thus making it impossible for the woman operator to get her hands under the die while the ram is in motion. Tongs are provided where the material must be held under the die and posture chairs reduce the hazard of becoming injured because of fatigue.

Clothing still is causing plenty of headaches for some Safety Engineers. When you hired a man to come to work, he would

report dressed for the job. Women, without this knowledge and being more vain than men, come to work as though they were entering a beauty contest and for any man to suggest that they pay less attention to their beauty during working hours is asking for trouble.

Primping up is still a woman's privilege, and, war or no war, the right to seek a mate is still a woman's right even though production at this time should come first. This may sound cynical; however, it is based on a cross section of thousands of women workers, although there are many exceptions to the above comments.

Even with these women characteristics, they are doing a mighty fine job and it is even more commendable when you realize the very short time that they have had to become familiar with industry. As time passes, they will become, no doubt, just as safe and just as productive as male employees in many of the lighter and more simplified trades.

In closing, I should like to say that safety education for women is far more essential than it ever has been for men. Accidents cause women to become more emotionally upset, and when they are upset, they not only become a hazard but do not add much to production.

We must think of the time when many of these women will go back into home life



• (Left) Woman drill press operator with treated canvas apron for protection against cutting oils. Furnished to shop employees by Douglas Aircraft. Above is shop employee wearing recommended apparel. Proper hair covering, safety glasses, leather gloves, tight-fitting blouse, slacks, and women's safety shoes

to raise a family and I can't think of any picture that could be as sad as a great number of fingerless, handless, or eyeless mothers to raise our coming generation. I am sure all industry will agree on this point. To prevent this horrible thing from happening, all industry must double and redouble its vigilance in safety!

Let's conserve our women for not only our immediate war efforts, but for our homes of tomorrow!

• Leather gloves and canvas sleeves are furnished to employees, while shoes may be obtained through Douglas welfare store



## Smallest Woman War Worker

**B**ELIEVED to be the smallest woman actively engaged in war work, Mrs. Molly A. Crouch, of Consolidated Aircraft's Tucson Division, stands only 4 feet 9 1/2 inches and weighs a mere 85 pounds. To top things off, she works on America's biggest bomber, the B-24 Liberator.

Mother of 12 children, seven of them living, she has three sons on the fighting fronts with the Marine Corps. Of her four daughters, two, Mrs. Violet Dalrymple and Mrs. Mamie Lewis, work for Consolidated at San Diego. The husband of another daughter, Mrs. Wanda June White, is a Consolidated employee at Tucson.

Born in Memphis, Tenn., Mrs. Crouch came to Tucson in 1935. For the past six years she operated a home laundry, doing the washing herself and driving the truck for delivery and pick-up. With gas and tire rationing upon her and so many of her children in the war effort, she decided she also could do a war job.

Enrolling in a sheet metal class, Mrs. Crouch soon was graduated and went to work for Consolidated in electrical assembly.



A "darned good worker," according to her fellow-workers and foremen, Mrs. Crouch's ambition is to join the Army Nurses Corps and serve on the fighting front. Consolidated, however, wants her to stay on the job.

## Housing Conversion Opens Up Business

**C**ONVERSION of existing dwellings, which will constitute more than half the accommodations the National Housing Authority expects to provide to meet the war emergency, and effects a 50 per cent saving in critical materials over new construction, offers business opportunities of which a number of Western cities are starting to take good advantage.

Campaigns to induce local residents in such communities to make use of extra space in their homes to provide living quarters for war workers, or to make over large houses into apartments, carry with them a profit appeal to both the property owner and the dealer in materials and equipment. To facilitate conversions, federal authorities are providing high priorities for materials and convenient financial facilities.

In Pomona, California, where the sudden advent of an army base and the nearby Kaiser steel mill provoked a housing shortage, a census was taken by the building contractors and the Pomona Chamber of Commerce of all the houses of over seven rooms which were only partially used. It was found that in this city of 25,000 people, there were 538 such homes, and some of them had as many as 21 rooms,

housing only two people. A local campaign to convert these homes brought good results for contractors and material suppliers and helped materially in solving the housing problem.

The states in the Far West constitute one of the major areas in the war housing program, according to John B. Blandford, Jr., National Housing Administrator, on his visit to the Pacific Coast last month. Of 3,000,000 accommodations which the NHA expects will be provided for the entire country, 1,700,000 are in existing dwellings. War Manpower Commission is now estimating the migration from July, 1943 on, and on his return to Washington Mr. Blandford hopes to work out new programs for the migration which is expected to continue into 1944.

For the period from July 1942 to July 1943, the number of migrant workers was given by Mr. Blandford as 1,600,000. For the succeeding period he believes it may be 1,000,000.

The San Francisco Bay area, Stockton, Los Angeles County, San Diego, San Bernardino, Tucson, Phoenix, Seattle, Spokane, Tacoma, Portland, Salt Lake City, and Provo already have been designated as critical housing areas.

In a number of these cities the National Housing Agency has set up War Housing Centers which have the authority to make seven-year leases of any suitable space for conversion into family units for workers, putting up the money, guaranteeing the owner a fixed net return based on the rentals and handing the property back at the end of the seven years. The NHA also conducts rental bureaus and other aids to relieving housing problems.

The War Production Board has assisted in the program by giving AA-3 priorities on materials and allocating supply so that the materials are available when the housing campaign starts. Conversion work may either be done by private capital or through the government.

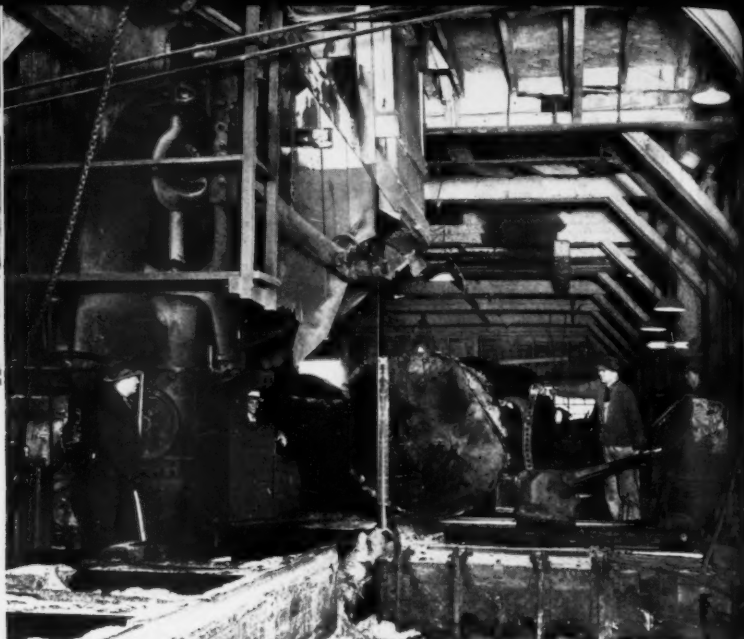
Local advertising campaigns have helped to stimulate interest in making use of the conversion opportunities. W. P. Fuller & Co., paint manufacturers, have used billboards in 30 Western cities to promote conversion, the boards carrying the slogan, "Put a roof over a war worker's family," and the profit appeal, "Rent your space now for cash. Remodeling materials available. Phone War Housing Center." Full color reproductions of these billboards and other aids to local advertising campaigns are being supplied by the Fuller company to Western industrial executives planning housing drives.

A complete community advertising campaign for the housing situation is also available for use, prepared gratis for the Victory Committee of the San Francisco Advertising Club by the McCann-Erickson agency.

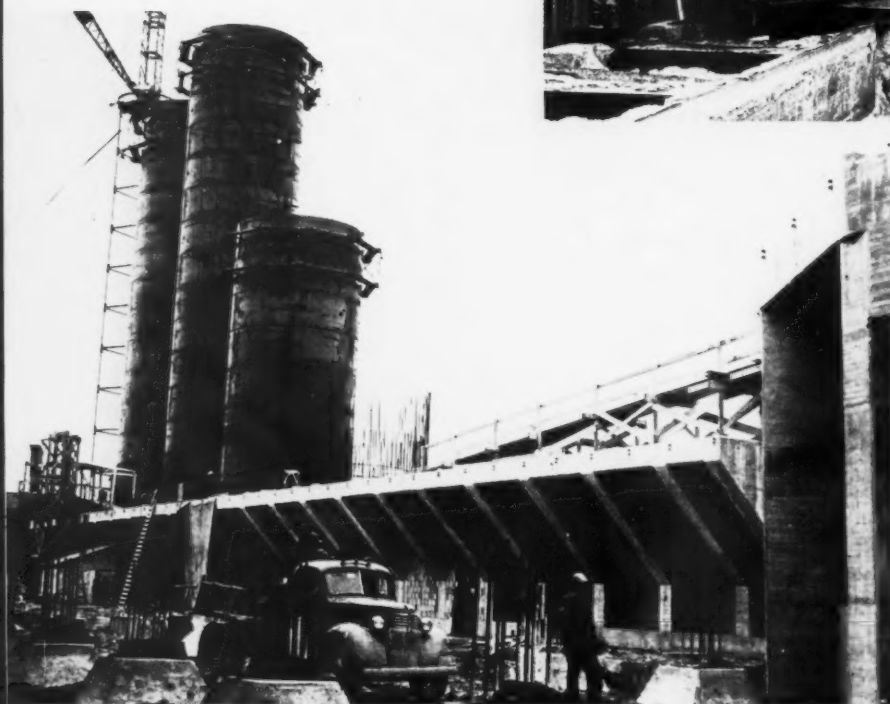




• Giving cartridge casings the once-over thoroughly is the job these gals are doing at the Norris Stamping Co. in Los Angeles



• Inside a saw mill. Huge Vertical Saws cut away first cants

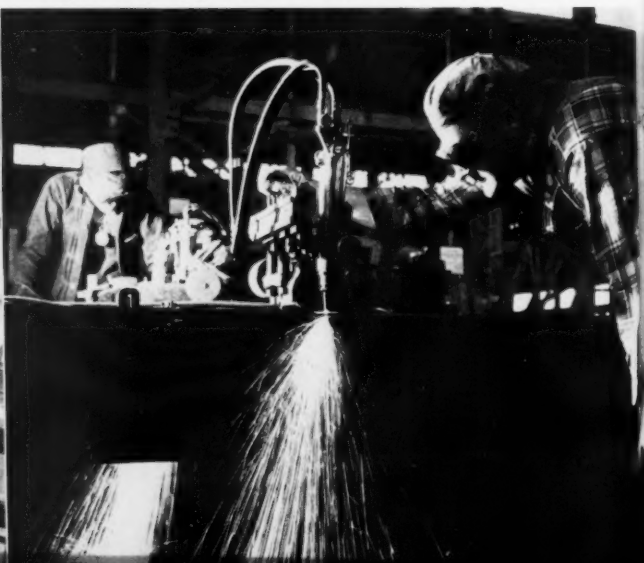


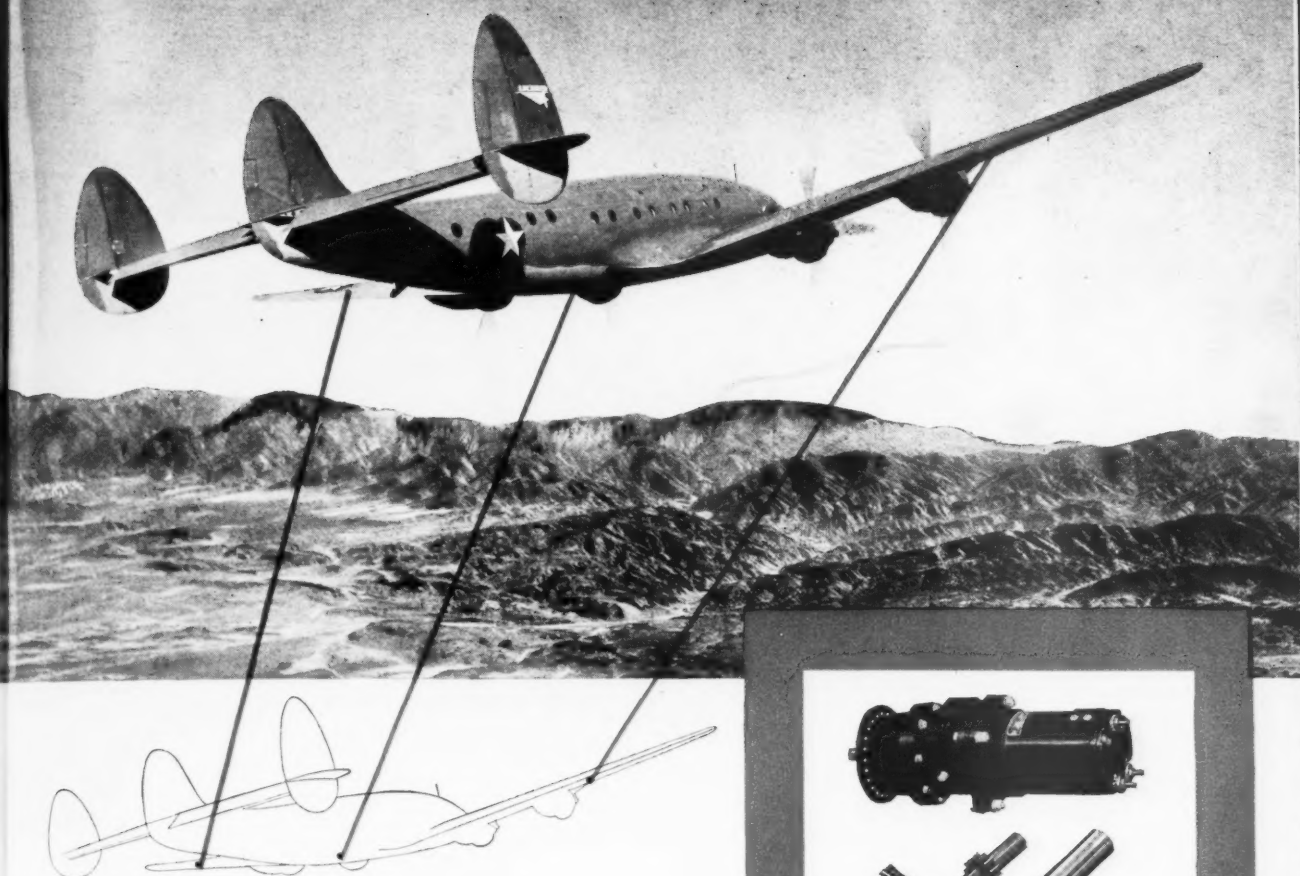
## WESTERN INDUSTRY In Pictures

• At left. Three stoves of Blast Furnace One already completed at Columbia Steel's Geneva Works. When all three are done, 1,200 tons of iron will be their daily capacity

• These girls really take their assembly work seriously. It's a war job in Pacific Gear Works' factory, Los Angeles

• Automatic cutting torches send sparks flying in the plate shop of the Oregon Shipbuilding Corporation in Portland





## The CONSTELLATION Flies

When Lockheed's super-transport, the Constellation, took to the air so successfully she flew with the aid of Pacific-Western parts.

There are two outstanding developments in this plane—the pressure controlled cabin and the extremely efficient wing flaps.

We manufactured the superchargers which normalizes cabin pressure at all altitudes in the Constellation and also built the operating mechanisms which move the Fowler flaps on the big plane.

As the Aircraft Industry advances—we keep pace.



We manufacture gears of all types for aircraft — Spiral bevel, Zerol bevel, hypoid, worm, spur and helical gears in all sizes and materials.

We also produce motor driven gear units complete with case and connections—your design or ours.

**PACIFIC GEAR WORKS**  
38TH & ROSS ST.  **LOS ANGELES, CALIF.**

Associated Companies: WESTERN GEAR WORKS—Lynwood, Calif. • PACIFIC GEAR & TOOL WORKS—San Francisco • WESTERN GEAR WORKS—Seattle, Wash.

# WESTERNERS AT WORK...

## On The Food Front

Frank Murphy has been promoted to vice president and general manager of the western division of Best Foods, Inc. He will make his headquarters in San Francisco. Mr. Murphy has been with the company since 1928. I. C. Bjork and S. M. Hench will be associated with him as regional sales managers.

## Logger Leaders

Roy F. Morse, manager of the logging and timber department of Long-Bell Lumber Co., is the new president of the Pacific Logging Congress. Donald Mackenzie of the logging department of Anaconda Copper Mining Co., was elected vice-president at the annual meeting in Portland last month; E. P. Stamm of Crown Willamette Paper Co, treasurer; and A. Whisnant, secretary.

## Safety Sultan

B. F. McDonald, president of B. F. McDonald Company, has been elected president of the Southern California Industrial Safety Society, composed of representatives of 485 industrial concerns.



**B. F. McDONALD**  
Takes Dent Out of Accident

The purpose of the society is to cooperate with industry and the War Production Board in curtailing the waste of manpower through industrial accidents. Other officers elected were: William Rhodes, vice-president, and A. A. Castle, secretary-treasurer.

## Test Tubes to V. P.

Ray C. Wheeler is now a vice-president of the General Petroleum Corp. This new position followed quickly his promotion

last December to the position of manager of General's manufacturing activities. Mr. Wheeler came to California in 1918 as a research chemist for the U. S. Army Ordnance Dept., and was placed in charge of G.P.'s experimental laboratory shortly



**RAY C. WHEELER**  
Climbs Operating Ladder

thereafter. Since, he has been general superintendent of the gas department, manager of natural gas and gasoline operations and manager of manufacturing.

## Need Money?

Keath Carver has been elected vice-president of the Bank of America in charge of the war loan department. He started as a clerk 18 years ago. Also, he is president of Filtrol Co. of California.

## Air Cargoist

Harry Karst, Los Angeles, has been appointed Western Air Lines' superintendent of mail, express, and cargo. He has been with the company since 1930, starting as a traffic representative. In 1934 he was named Los Angeles district traffic manager. Recently he had been based at Salt Lake City as coordinator of all ground school phases of Western's pilot training program.

## C. of C. Changes

Louis B. Lundborg has been elected general manager of the San Francisco Chamber of Commerce. He was succeeded in his former position as assistant general manager of the State Chamber, by Frank McKee. Fred C. Tatton goes in as Central Coast District manager, and E. M. Fennon is manager of the Sacramento Valley District.

## Aeronautical Award

Edward C. Wells of the Boeing Aircraft Company, Seattle, has been selected to receive the Lawrence Sperry Award for 1942. The award is given annually for notable accomplishments in the advancement of aeronautics. Mr. Wells, who has been with the Boeing company since graduation, was appointed assistant chief engineer in 1939 at the age of 28. He is responsible for much of the design and engineering work on the "Flying Fortress," B-17 Army bombers.

## Mining Men

Ernest C. Van Blarcom of Great Falls, Mont., has been appointed superintendent of the zinc plant of the Anaconda Copper Mining Co., succeeding H. G. Satterthwaite, who has been made general superintendent of the Basic Magnesium, Inc., plant at Las Vegas.

## High Climber Again

Orville R. Miller has been reelected to serve a second term as president of the West Coast Lumbermen's Association. Serving with him are: C. H. Kreienbaum, vice-president for Washington; G. T. Ger-



**ORVILLE R. MILLER**  
Lumbermen's Leader

linger, vice-president for Oregon; Judd Greenman, treasurer; Colonel W. B. Greeley, secretary-manager. Mr. Miller is vice-president of the Wauna Lumber Co., Portland, Ore.

## Tidewater Director

Thomas J. Dockweiler of Los Angeles has been elected to the board of directors of the Tide Water Associated Oil Company, succeeding the late George N. Armsby.



# FOR VICTORY TODAY AND SOUND BUSINESS TOMORROW



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It means that billions of dollars are being diverted from "bidding" for the constantly shrinking stock of goods available, thus putting a brake on inflation. And it means that billions of dollars will be held in readiness for post-war readjustment.

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**WESTERN INDUSTRY**

503 Market St., San Francisco, Calif.

# Early Start Makes Planning Profitable

**Post-War Projects Then Will Earn Return on Investment Instead of Being Largely Waste**

**T**HERE are those who believe the post-war problem should be forgotten until the war has been won. Another school of thought recommends the immediate initiation of a large-scale program of nationwide planning. I believe the second school of thought is the right one.

The great depression of the 1930's caught us wholly unprepared to utilize efficiently the millions of workers thrown out of jobs, consequently, projects had to be initiated for operation without proper preparation.

If it becomes necessary to spend money to alleviate unemployment, why not make it a sound investment that will create additional opportunities for men to earn a live-

By REX L. NICHOLSON  
Regional Director of the Federal Works  
Agency for the Eleven Western States

lihood and accrue a return on the investment?

The West derives its income from three broad fields: agriculture, mining and lumber. Industry has been attracted to the West by the availability of raw materials and cheap power.

Instead of producing raw materials and shipping them East for processing and fabrication as has been done in the past, manufacturers can be interested in establish-

ing large plants near these raw materials and cheap power so that our communities will have the advantage of the resultant payrolls. The final cost of the finished products can be reduced materially and still allow the manufacturer to earn a reasonable profit through the elimination of the transcontinental transportation costs we have experienced in the past.

The very foundation of sound post-war planning for this Western region should be built around the conservation, development and preservation of our natural resources. Water is the pearl of great price in the West. The entire program of water conservation, soil conservation, reforestation, power development, and flood control can be accomplished by broad programs.

Generally speaking, responsibility for the financing of a program of conservation and development of natural resources will have to be assumed by the federal government. A comprehensive plan for this purpose should be laid out for each of our main rivers and their watersheds. In most cases, these rivers cross several state lines,

## What Some of Our Readers Think

*(Comments on Carleton Tibbett's post-war planning article in February issue)*

### Industry Waking Up

**I**T GIVES me great pleasure to agree with the thought of Mr. Tibbetts, the outgoing president of the Los Angeles Chamber of Commerce, that private enterprise should take the lead in post-war planning. We who have been planning on behalf of our state, regional, and national groups, and who are referred to sometimes as "government planners" have pretty well worn our knuckles to the bone knocking on shut doors of industry to get them interested in it.

We believe that the time is ripe, however, due to the great changes brought in by the war, when private enterprise feels the need for post-war planning as it never has before. This, perhaps, is due to the fact that there is a responsibility for full employment which is primarily that of private enterprise and only secondarily that of government. Therefore, planning to that end is indispensable.—*Ben H. Kizer, chairman, Washington State Planning Council.*

### Industry Knows How

**I**-CERTAINLY do agree with Carleton Tibbetts, outgoing president of the Los Angeles Chamber of Commerce, that private enterprise should take the lead in post-war planning.

As president of the Manufacturers' Association of Washington, I have

been continually pressing our Board of Directors that it is our duty, inasmuch as industry is the life blood of this country, to take the lead and persistently and consistently push this idea.

It certainly would be a mistake and would become very serious if we allow some of these "crack-pots" to lead who think we can build up an Utopia after the war. Also, it does not seem that we should assume too wide a responsibility for all the peoples of the world. They are going to have to do something for themselves. It would be well to get our own house in order. Let's keep ourselves strong. There is going to be lots to do and truly we need good, clear, constructive thinking and leadership.—*G. P. Halferty.*

### Already At It

**F**IRST of all, let me say that pages could be written; but at the moment business is interested in having its direction returned to private hands as quickly as possible at the termination of the war. There is no indication of this as yet from Washington except the Wallace speech which, in the first half, is very fine; but if you read the second half of it you find the propositions made completely nullified. After all, we must bear in mind that this is not a commitment by the President.

However, our own house must be in order so that we can take up the unemployment surplus between war-

end and prosperity. That is a job which is up to business.

We here have two plans in process. The first, an overall post-war program now in the making by five of our top men; and to follow that a post-war program—business by business—which, to set up, will require perhaps one thousand participants and which will view conditions now and in the future from the standpoint of sales and other possibilities. A report will be made by each division of business working as a group.

Just as a forecast—some of these will indeed be startling; we have gone far enough to know that our eyes will be turned toward the future, toward a new clean page instead of toward the past.—*Another Commentator.*

### Depend on Business

**B**EING a loyal and consistent member of the National Association of Manufacturers, we certainly believe that private enterprise should take the lead because with our experience with affairs of Washington, we cannot conceive that people who know less about real planning than the people do who have been planning over a long period of time, are qualified to take the lead. Therefore, it is our thought that there should be some council set-up of private enterprise who would do the post-war planning.—*A Manufacturer.*

making their development a joint responsibility of groups of states and the federal government.

We should have adequate and thorough mineral surveys in order to make proper plans for the development of low-grade ores. Localized production of natural gas and petroleum presents a definite distribution problem.

All of this type of work is not only economically sound, but is absolutely essential. Employment can be provided for every surplus worker in the eleven Western states. Money spent on this basis will be a sound investment in permanent income.

There should be developed a complete grid system of highways tied into transcontinental highways. By the end of the war there will be a definite need for 9,000,000 new rural and urban homes. Along with the need for additional housing will come an equal need for additional utilities and community facilities. Present airport facilities will be found to be entirely inadequate.

Comprehensive studies of population trends should be made in each county based on (a) the county's population before the war effort began, (b) what it is now, (c) what it would be likely to be if the county's natural resources were developed to the maximum, (d) how many of those who have gone elsewhere to work in war plants could be expected to return to their own communities when the war is over if they knew there would be jobs at prevailing wages on some important public work project waiting for them if they need them to help re-establish themselves.

Development of a plan of this scope will require active participation by practically all governmental groups, engineers, contractors, organized labor, and public spirited citizens. A board representing all groups would undertake development of the general plan. Individual plans should be completed to detailed estimates of materials and man-hours.

It will require the joint effort of the enterpriser, the worker, and the government to readjust our own country and the other countries of the world after the war. To postpone preparation for this task will be courting disaster.

EDITOR'S NOTE: Next month *Western Industry* will publish a preliminary post-war planning list of organizations, firms and individuals. Those who have not already supplied the necessary information to *Western Industry* and wish to be listed should do so immediately in order to be included.

#### Until War Is Over

• Laying down the dictum that "as a general rule, a regularly established union shop or closed shop shall remain regularly established for the duration of the war," the War Labor Board has ordered the union shop and check-off restored at the Harvill Aircraft Diecasting Corporation of Inglewood, Calif.



## We have two reasons to be proud of this Flag

**First, of course,** we are proud of the Army-Navy "E" flag because it is an award to the 3,000 employees of our Richmond refinery. We have long known that their energy, devotion and skill merit the highest praise.

The other reason is that this flag is a harbinger of better days to come, when we will take pride in offering to industry the fruits of Richmond's tremendous war effort.

Today we can only hint at the giant strides our petroleum research and production have made. We cannot publish the specifications of a host of new products, nor the story of how old products have been sensationally improved. We cannot describe the system by which these products are distributed on a world-wide scale.

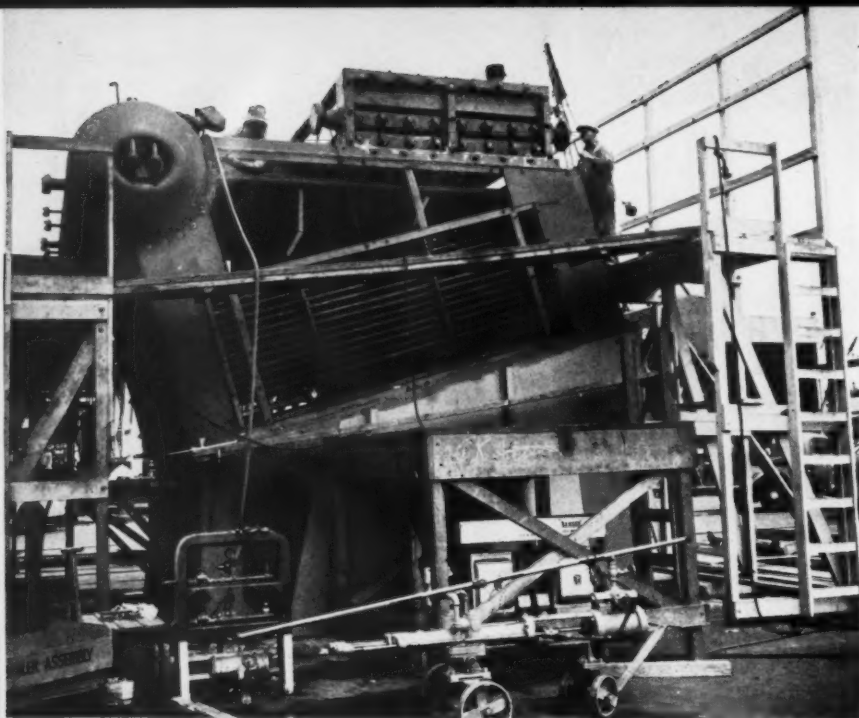
But we can promise you that, when these facts become known, they will open new horizons for American businessmen and technicians in many fields. They will prove once again that "know-how" and determination can turn yesterday's impossibilities into tomorrow's accomplishments.

In the meantime, the Richmond refinery and all of Standard of California are living up to the Army-Navy "E" flag, helping bring the inevitable victory nearer.



**STANDARD OIL COMPANY OF CALIFORNIA**





## Keeping Clean Is No Simple Matter

**T**HE removal of dirt from metal surfaces seems a ridiculously simple procedure. Actually it is a complex process involving hundreds of physical, chemical and production problems.

Strict military standards and high-output schedules have focused more attention on metal cleaning, degreasing and decarbonizing than ever before. Practically every machined part must be cleaned once, while many pass through more than a dozen cleaning operations before completion. Spotwelding, electroplating and painting depend upon the proper preparation of the metal to insure the exacting quality of work that is demanded for fighting equipment.

The removal of soil no longer can be trusted to a bucket of solvent and a wire brush. Highly trained chemists and engineers now collaborate with field men and industrialists in applying production-line methods to cleaning operations.

For example, by using the new production-line methods and materials, a large west coast shipyard was enabled to slash as much as 32 hours from the cleaning time

By RAY SANDERS\*

required for boiling out new ships' boilers prior to launching. An aircraft factory broke the bottleneck of stripping zinc chromate primer from aluminum by using a specially formulated material which does the job in from three to fifteen minutes—an undreamed-of speed.

The preparation of aluminum for spotwelding is one of the most important operations in wartime production. A compound was developed that cleans the surface chemically and metallurgically, insur-

• Heavy protective coatings in drums and tubes of ships' boilers have to be "boiled out" after installation. Only about 16 hours now required for a job which formerly took 48

ing new standards of cleanliness and uniformity which opens new vistas of rapid fabrication.

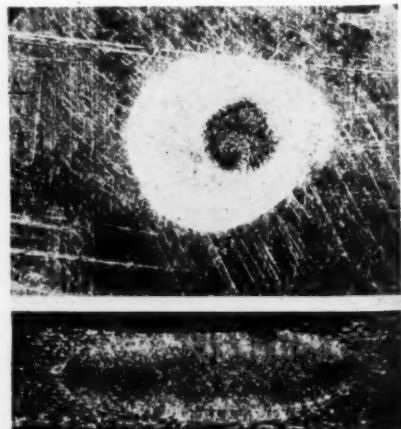
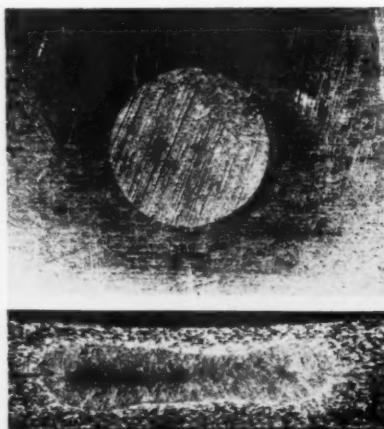
Successful production-line cleaning depends upon several factors: The type and amount of soil, the efficiency of the mechanical apparatus which is used to bring the solution into contact with the dirt, the temperature at which the cleaning is carried out, the corrosive or perishable nature of the surface to be cleaned, the time of immersion and the efficiency of the cleaning material.

A good cleaner will emulsify oils, fats and greases, and will disperse solid dirt. It will saponify fatty acids which are found in many machining oils. It will lower the surface tension of the solution to a measurable extent. The solution will be stable in the presence of acid soil and will not form adherent and insoluble substances during the washing process. The first insures long life in solution; the second free-rinsing. The quality of rinsing freely insures a cleaned surface on which there is no residue or film left by the cleaner.

A large part of the average dirt film consists of grease which contains insoluble solid particles. The grease itself usually consists of a small proportion of oils that can be changed into solids by the cleaning solution and easily rinsed off. The major proportion, however, does not saponify. These can be removed only by a cleaning solution which penetrates the film and breaks the bond between it and the surface. Then it is easily removable by physical means such as spraying.

Finally, under practical conditions the ideal cleaner must remove soil thoroughly in a reasonable period of time without hazard to workmen or to the material to be cleaned and at a nominal cost per unit.

\*General Manager, Turco Products, Inc.



• Top picture at left (many times enlarged) shows top view of spotweld when metal is properly prepared. Bottom view is of a cross section of the spotweld. Pictures at right show same sections when the metal is improperly prepared

## Coast Cities Lead in Gains

Seattle ranked first among 14 prominent areas in the nation in percentage of employment increase from June 1940 to November 1942 and second in percentage of payroll increase, while the San Francisco Bay area took first place in the payroll classification. The Buffalo and San Francisco chambers of commerce cooperated in making the survey, and the figures are as follows:

	Payroll Increase	Employment Increase
San Francisco Bay Area	423.9%	200.6%
Seattle	406.0	203.0
Minneapolis*	318.2	159.2
New Haven*	210.0	125.0
Buffalo	188.6	89.5
Los Angeles	319.0	84.2
Baltimore*	163.0	73.0
Cincinnati	161.0	72.1
Boston*	199.0	68.7
Cleveland*	107.4	64.8
Milwaukee	146.3	60.0
New York City	100.0	54.2
Detroit	125.5	43.2
Chicago	42.0	38.6

\*Approximate.

## Electronic Tubes

Largest exclusive manufacturers in the United States of electronic vacuum transmitting tubes is the rank claimed for Eitel-McCullough, Inc., who recently opened a second plant in Salt Lake City. Their first factory, started in 1934, is at San Bruno, California. Products of the company include de-icing control instruments for planes, parts of the electronic radar beam and new electronic device by which watchers can count, identify and follow planes.

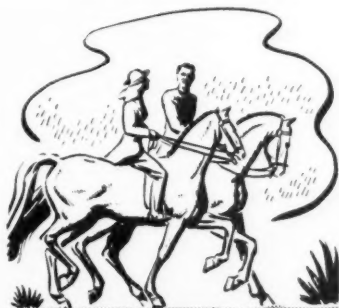
## BUSINESS BOOKS

• *Metallurgy*, by Carl G. Johnson. Presents information on the subject of metals in such a way that the average individual who has had no opportunity to study the subject formally will be able to obtain some working knowledge of the manufacture and behavior of metals and their alloys. Text is recommended for those who are working in industry and seek some general knowledge of why metals behave as they do. Price, \$2.50. Published by American Technical Society, Drexel Avenue at 58th St., Chicago, Ill.

*California Mineral Production and Directory of Mineral Producers for 1940.* One of a series of annual statistical reports, Bulletin No. 121, contains 227 pages of detailed data covering the amount and value of metallic and non-metallic minerals, subdivided as to fuels, metals, structural materials, industrial materials, and salines, both by substances and by counties together with various charts and graphs. Price 80c. California State Division of Mines, Ferry Building, San Francisco, Calif.

• *Understanding Your Income Tax.* A booklet which attempts to make clear how the average man is affected by the 1942 tax law. Covers fundamental points in 16 pages, including a step-by-step procedure for filling out and filing an income tax return. For manufacturers to distribute to factory workers. Price, \$4 per hundred. George Douglas, Secretary, Committee on Government Finance, National Association of Manufacturers, 14 West 49th St., New York, N. Y.

• *The Care and Operation of a Lathe.* A pocket size, paper covered manual, written for the apprentice or student machinist. Illustrates and explains: The modern backgeared, screw cutting lathe, its parts and their functions; oiling and proper care of a lathe; the grinding of cutters, modern lathe tools; holding the work; and the performance of basic lathe operations. Price, 50c. Published by Sheldon Machine Co., Inc., Chicago, Ill.



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Member F. D. I. C.

# Food Problem Ranks Ahead of Manpower

**West Will Feel Big Effect from Government's Long-Range Plans to Increase Farm Outturn**

IN THE order given, the chief subjects of concern here still are food, manpower, taxes. They are part of the main stream of interest, war, as well as part of the permanent problem of the destiny of the nation. Food remains the top subject.



You may not realize it yet, but the Food Administration is about the biggest single part of our civil government today. In reality the Food Administration has all but completely absorbed the Department of Agriculture. It has taken over functions of several divisions and branches and sections of the War Production Board, and of the Office of Price Administration, the Bureau of Economic Warfare, War Manpower Commission, Office of Defense Transportation, Lend-Lease Administration, Department of Interior, State Department, National War Labor Board, and other agencies whose number and details would bore you.

It buys for Lend-Lease domestic needs and for its various war needs, including our Allies and what some persons here call the foreign WPA. You may realize the extent of its expanding functions when you learn that from WPB alone it took over enough of various parts to compel the transfer of more than 50 Industry Advisory Committees, affecting upwards of 50,000 establishments in all parts of the country employing over 1,000,000 persons. Roughly 1,500 WPB officials and personnel have been transferred from WPB to the Food Administration. Personnel, naturally, also has been transferred from other agencies.

The West Slope obviously will feel the effect of some of this immediately, and will feel it more in the future. In his recent report to the President, the Food Administrator, who is also Secretary of Agriculture, Wickard, pointed out that in 1942 the farms of the United States produced to the last ounce of their capacity.

Mr. Wickard emphasized that, in addition to the abnormal demand upon us as a result of the war, the normal increase in population makes mandatory the development of more new productive lands. He says specifically that during the next 20 years we must bring into production at least 40,000,000 more acres. Apparently, Mr.

By ARNOLD KRUCKMAN

Wickard regards this as an irreducible minimum.

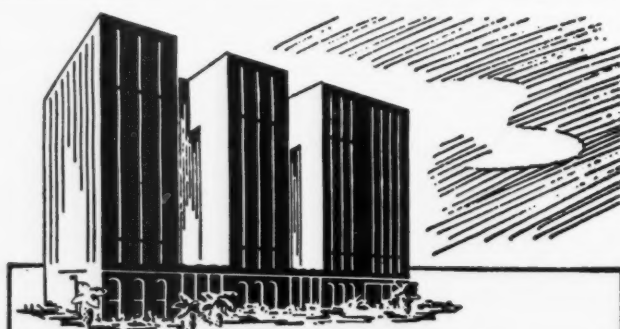
He flatly poses the need of the development of an average of 2,000,000 acres annually for the next 20 years, but he does not offer a plan. However, Reclamation Commissioner Page and other agricultural experts have various well-defined plans to bring the acreage into being. Page has already prepared plans which would roughly make 8,000,000 acres swiftly useful in the Western area where irrigation makes possible the development of land susceptible of scientifically controlled farming with greater and quicker yields. And that is only the beginning.

You must appreciate the long-range plans behind the Food Administration to get the full impact of its significance.

The idea is to create an international board which will do for all the world what Joseph did for Egypt. It would set up a pool control on wheat, for instance, in the United States, Argentina, Russia, the Danube Basin, and other wheat-growing areas of the globe, and would schedule distribution to make sure that wherever the supply is short, famine may be averted by drawing upon the international reserve granary. The same plan obviously may apply to other farm products.

At this typing, the Food Administration is rather uncomfortably in the perspective of Congress. In January—on the 7th, to be exact—the Food Administration published Food Distribution Order 3, Part 1405. When it was issued it seemed so routine that few paid much attention. But, as interpreted by another government agency, the order is construed to mean that:

It forbids ALL transactions in the United States for domestic, export, or import of concentrated orange and lemon juices, unless sales are made to Lend-Lease, Army and Navy. There is no expiration date for the order. Veterans Hospitals may not be solicited nor sold, and the order includes prohibition of sales to private and municipal hospitals and similar institutions. Beverage flavors are combined in a mixture of peel oils and juices. Labels which come under jurisdiction of the Food and Drug Administration would be difficult to change. The formulae on these labels are almost invariably built upon actual fruit products. *This means that the entire*



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civilian beverage sale in the United States, and for export, is terminated indefinitely; and this signifies that citrus fruit oils themselves will diminish in use, unless the manufacturers revert to their old formulae which did not contain concentrated juices.

Another order on January 12 ordered handlers in California, and in Florida, Texas and Arizona, to set aside an undefined quantity of fresh oranges, limes and grapefruit to be delivered to processors for production of concentrates and oils. A third order double-riveted the comprehensive purpose of the first order by specifically including all grapefruit in the prohibition against sales and export.

The order flatly makes illegal any sale of concentrated citrus juices and oils to any person, firm or agency, unless the sale is for the account of the Federal Government for Lend-Lease, Army, Navy, Coast Guard, or Maritime Commission. No foreign seller may dispose of citrus concentrates or oils in the United States unless he sells them to the Federal Government.

Full effect of the citrus concentrate and oil order is not expected to hit the country until summer. As Congress sees it, the beverage industry must then either quit making the beverages for civilian use, or it must fall back on synthetics.

Members of Congress point to the fact that it has taken many years to impose the need for the use of real juices as flavors upon the beverage industry. They point to the machinery built up by the Food and Drug Administration to enforce the law and stress the fact that synthetics have no nutritional worth. They suggest that the products sold to the Federal Government do not come under any price ceilings. Products sold to the civil population come under price controls.

Members of Congress have discovered that some Eastern jobbers, who largely dominate some phases of the distribution of citrus concentrates and oils, have lately developed an expansion in production of substitutes, synthetic flavors and extracts. And it has been advertised that some producers of synthetic extracts and flavors and similar substitutes anticipate the artificial materials will inevitably be cheaper in the post-war market, and will be abundant and capable of pushing aside some of the real concentrates.

The same members of Congress, who vigorously insisted that we should keep some of the 17,000,000 pounds of butter at home and send some of the oleomargarine to Russia, apparently will ask that some of the synthetics be sent abroad and that some of the concentrates be retained here for domestic use. The Food Administration answers that the civil population of Britain now chiefly depends upon our citrus fruit juices for some of the vitamins which sustain their health; and that stupendous quantities of the concentrates are required for our soldiers and sailors here and abroad.

The Food Administration insists the quantity now produced is less than enough to supply the total needs of the British and other Lend-Lease countries and our own armed forces. Meanwhile, some requisitions of the British for other concentrates, such as peppermint oil used in nationally popular British candy lozenges, have been

denied by the Food Administration until the end of this fiscal year, June 30. The whole subject is expected to be brought up in committees of Congress and upon the floor of the House and the Senate. It is anticipated the representatives from California and Arizona will be particularly interested in the prospective discussions.

## Family Represented on Both Battle and Production Fronts

FEBRUARY 6 was expected by the Bannan family, who operate four gear and tool works on the Pacific Coast, to be strictly a home-front celebration centering around the awarding of the Army-Navy "E."

But it turned out that they found themselves represented on the battle front also, because First Lieutenant Bernard Bannan (Ordnance) who was at Hammer Field, Fresno, when they last heard from him six weeks before, telegraphed them that day from North Africa that he was with the American forces there and safe and well.

He is one of the six sons of Philip L. Bannan, Sr., President of the company, and four of his brothers are executives in the concern. Bernard is a graduate of Santa Clara University, where he mixed in some athletics with his studies. His fifth brother is in the priesthood.

The "E" was awarded Western Gear Works at Seattle, and was preceded by a "family luncheon" where the employees presented a "victory pledge" to Thomas J. Bannan, executive vice-president and general manager. The pledge, signed by all members of the "employees family," promised "a supreme effort for final victory."

Charles F. Bannan was master of ceremonies for the luncheon program and workers and their families filled the assembly floor.

Philip L. Bannan, Sr., came up from San Francisco to receive the efficiency pennant from Captain Samuel E. Ginder, U.S.N., commanding officer, Naval Air Station at Sand Point and commanding officer, Air Control Center, Seattle. Brig. Gen. Eley P. Denson, Commanding General, Seattle Port of Embarkation, represented the Army.

The ceremony was broadcast over the Pacific Blue Network, and employees at the other plants joined in the celebration by simultaneous reception.

The Pacific Gear & Tool Works, established in San Francisco 50 years ago and incorporated in 1903, is the original company of four related plants operating on the Pacific Coast: Western Gear Works, Seattle; Western Gear Works, California Division, Lynwood, Calif.; Pacific Gear Works, Vernon, Calif.

Special landing barge machinery is one of the large war contracts handled in the Seattle plant.

• Western Gear Works "E" ceremony. Left to right: Captain Samuel P. Ginder, USN, who made the presentation; Brig. Gen. Eley P. Denson, representing the Army; Philip L. Bannan, Sr., president of the Company; Thomas J. Bannan, executive vice president and general manager



# LABOR

## AND THE INDUSTRIAL WEST

### Offer Prizes To Stop Absenteeism

To deal with the perplexing absentee problem, Consolidated Aircraft Corporation, San Diego, has instituted a \$10,000 monthly distribution of war bond prizes to 73 employees selected from approximately 40,000 workers on the basis of individual attendance and the average attendance of the crew to which they belong. Capital prize is \$1,000, lowest prize \$25.

A 10 per cent daily loss man-hours was reported to the Regional War Labor Board by Consolidated, and it was estimated that an equivalent of 3,500 trained employees failed to appear on the job during the average month, representing 700,000 man hours that could be utilized in building 36 more bombers.

Consolidated's action closely follows the visit of Charles E. Wilson, WPB production vice-chairman, who said absenteeism in the aircraft industry was costing a heavy loss in plane production.

WPB officials said that the rate of absenteeism was highest among women war plant workers because of the lack of nurseries to care for children, illness among children, and the necessity of devoting time to the growing complexities of rationing.

Employees of Albina Engine & Machine Works, Portland, have signed a pledge to President Roosevelt that they would not take even one hour off work unnecessarily until the war is won. Calvin Lewis, an Albina electrician, is quoted as saying that unnecessary time off is one method of digging a grave for American fighting men.

### Another Lumber Increase

Taking advantage of the automatic reopening clause of their agreement with lumber operators, the AFL lumber and sawmill workers union have asked for another increase in wages and a 48-hour week guarantee, only 45 days after new wage scales retroactive to May 1, 1942, had been established by the West Coast Lumber Commission.

The demands involve all AFL operations in Oregon, Washington, Montana, Idaho, and northern California. Mills and camps are expected to follow suit when

their similar contracts, with the automatic reopening clause, expires April 1.

The present demands, to be retroactive to January 1, include:

1. A further increase in wages, to bring the basic minimum pay (at present 90 cents an hour) to \$1.05 an hour.
2. Night shift differentials of 4 cents an hour (at present 3 cents) for the second shift, and 7 cents an hour (4 cents now) for the third shift.
3. Adjustments of bracket scales to establish standard wages for employees in all jobs and classifications in the industry.
4. A dollar-a-day bonus for all regular employees on the payroll for 90 days.
5. A guarantee of 48 hours pay each week for all employees available for work.

### Stanford Law Man Heads Wage Board

George E. Osborne, professor of law at Stanford University, has been appointed chairman of an industry committee of 36 persons to establish a minimum wage rate in the combined metal, plastics, machinery, instrument and allied industries, employing about 7,500,000 wage earners throughout the country. W. A. De Ridder of Los Angeles, president of General Metals Corpo-

ration, is a member of the employers group on the committee, which held its first meeting at New York on Feb. 16.

This is the first time a group of industries has been handled by one committee. Professor Osborne has acted previously on rail, motor carrier, clay products and wood furniture industry committees. The highest minimum wage rate that may be recommended by this committee is 40c an hour, which may sound low for the West, but actually is far above the 22c that was being paid as late as last May in some southern states.

### Lengthy Hearing In Kaiser Case

Hearing before a National Labor Relations Board examiner of the CIO charges against the Kaiser shipyards at Portland of collusion with the AFL in hiring of labor is proving to be a two-month session, at least, with quite a bit of fireworks on the side.

Judge Fee in the U. S. district court declined to grant an injunction against the NLRB to stop the proceedings, sought by the Kaiser attorneys on the ground that the members of the board were prejudiced and partial and already had administratively held legal the closed shop contracts in question.

Another attempt to halt the case on the ground that the government is the real owner of the yards and the workers therefore are government employees and not subject to the Wagner Act, was denied by the NLRB trial examiner.

Al Hartung, senior labor adviser of the War Production Board and former regional director of the CIO testified that

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OREGON

Harry F. Morton, chief Kaiser labor counsel, had said "Mr. Kaiser is a pretty popular man and he will see that charges (against the Kaiser yards) are never heard."

AFL President William Green telegraphed President Roosevelt asking that the hearing be stopped, and John P. Frey, president of the AFL Metal Trades Department, asserted in a press interview that the NLRB has become so dictatorial in the matter of the AFL master shipbuilding agreement that the AFL unions might have to withdraw their pledge against work stoppage.

### Here And There In Labor Picture

Shell Oil Company of California ordered by War Labor Board to include maintenance of union membership clause in its contract with CIO Oil Workers International Union on ground that a vigorous union is essential for efficient and continued production. . . . Donald Douglas asks NLRB to hold election at the Douglas El Segundo plant and CIO asks to be declared bargaining agent for all the Douglas plants (only labor contract now held by Douglas is with a group of 200 welders at Santa Monica plant). . . . NLRB orders election at Phelps Dodge plants in Los Angeles, requested by CIO special labor relations court instituted in Los Angeles County superior court passes out of picture for lack of cases. . . . Judge Crawford in Portland urges opposing factions of boilermakers local to settle their differences out of court in order to achieve harmony instead of just a legal ruling. . . . AFL Teamsters Union files complaint with NLRB against Associated Farmers of Imperial Valley accusing it of causing Holtville Ice & Cold Storage Co. to refuse to do

business with the Teamsters. . . . Eight principal Los Angeles shoe manufacturers sign new CIO contract requiring maintenance of union membership and raising beginners wages from 40 to 46 1/2¢ an hour. . . . CIO wins election at Willard Storage Battery plant at Los Angeles. . . . CIO loses election among guards at Bethlehem's Vernon plant. . . . AFL won over CIO at United Linen Supply Co., Los Angeles. . . . Area advisory committee of War Manpower Commission charges that boilermakers local has discriminated against negro men and women at Richmond shipyards. . . . L. A. Board of Water and Power Commissioners discharges 30 AFL pipe fitters for jurisdictional strike. . . . CIO won election at Century Metalcraft Co., Los Angeles. . . . United Mine Workers designated bargaining representatives for U. S. Gypsum Co., plant at South Gate, Calif. . . . CIO Industrial Union designated as bargaining representative at Northwest Metal Products, Inc., Kent, Wash. . . . CIO Lumber and Sawmill Workers ditto for Smith Wood Products, Inc., Sutherlin, Ore. . . . 320 mine workers at Lava Cap Gold Mining Corporation, voted to continue at \$6.48 per eight-hour day and abandon request for \$1.10 increase when company explained it was making little profit and any increase in operating costs would necessitate closing down.



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## Smaller Plants Get Their Share

Small production plants of the three Pacific Coast states and Arizona, Nevada and Idaho, shared a total of 317 war contracts aggregating \$5,210,443 for the four months ending January 30 as a result of WPB's regional program to spread war work. This has been under the direction of Oscar L. Starr, deputy regional director of WPB. Average dollar volume of each small plant contract was \$16,400 and the number of employees ranged from five to 500 per plant with the majority in lower brackets.

WPB continues to urge all war plants having idle facilities and needing work, to get in touch with their nearest WPB office. This applies especially to western plants not previously registered with WPB and which, under special circumstances, can be pooled for subcontracting in the program.

Examples of this diversification of war contracts among "the little fellows" were recently cited by David E. Faville, professor of marketing at the Stanford Graduate School of Business. Plants at Stockton have specialized on overhauling winches and hoists from ships sunk at Pearl Harbor, Sacramento establishments on recondition-

ing laundry and galley equipment torn out of vessels reconditioned in San Francisco Bay yards, and Fresno, where 25 small machine shops formed a pool called "Central California War Industries, Inc.," has become expert in turning out ship fittings in record time.

## Urge 45 Miles for Trucks and Buses

Forty-five miles an hour for trucks and buses, instead of 35, is urged by the California Railroad Commission on the ground that the higher speed increases efficiency 15 per cent and does not make any apparent difference in the consumption of rubber.

Road tests by staff engineers showed considerable increase in the number of gear shifts and brake applications at the lower speed, which would result in more slippage and greater wear on parts that are difficult to relace. Higher speed, in the Commission's opinion, would permit more time at the terminals for servicing and repairs, thus keeping the equipment in service.

## WPB-OPA Crackdowns

Triple damages of \$19,901 awarded OPA against the Gardiner Manufacturing Company of Oakland for selling nuts, bolts, and similar items above legal ceilings to San Francisco Bay region shipyards . . . nine months' priority suspension order against United Electric Company, Oakland, for illegal use of P-55 for purchase of 40 miles of copper wiring and unauthorized installation of copper wiring in temporary projects . . . three months' suspension against Paramount Flag Company, San Francisco, for using A-1-A ratings issued for flags for armed service and merchant marine to obtain materials for unauthorized purposes . . . Friedman Bag Company, Los Angeles, two months' suspension for using M-47 in selling approximately 250,000 burlap bags in excess of quotas . . . C. E. Dole Building Materials, Vallejo, three months for unauthorized use of A-2 on purchase order of 400 kegs of steel nails . . . Hedberg Siren Company, San Jose, denied all further use of aluminum for manufacture and all sales of its products containing aluminum denied for six months . . . OPA files complaint against Milton Fox of San Jose for selling iron and steel scrap above ceilings, Fox charged with receiving \$4,000 in illegal prices from Joshua Hendy Iron Works since February 1, 1942 . . . Hendy restrained by federal order from buying scrap in excess of maximum prices . . . Hi-Duty Company, Los Angeles, fined \$1,200 and its president, William F. Huber, \$500, for melting 15,000 pounds of aluminum scrap and turning it into automobile pistons in violation of WPB orders.



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# THE WEST ON ITS WAY

## Lead in Building Permits

Seven out of the 20 leading cities in the United States in value of building permits for 1942 were from the West, and one of them—Los Angeles—topped the list. Los Angeles was comfortably ahead of both Detroit and New York, and exceeded the combined total of Chicago and Philadelphia. Seattle ranked ninth, Portland eleventh, Long Beach thirteenth, San Diego sixteenth, Tacoma eighteenth, and San Francisco nineteenth.

The compilation, by Dun & Bradstreets, Inc., is as follows:

Los Angeles .....	\$60,219,846
Detroit .....	54,988,212
New York .....	48,462,520
Washington, D.C. ....	30,832,350
Chicago .....	30,738,121
Cleveland .....	24,471,600
Philadelphia .....	23,707,080
Baltimore .....	21,449,994
Seattle .....	19,062,040
Houston .....	16,659,544
Portland, Ore. ....	14,209,670
Akron .....	13,114,571
Long Beach .....	12,385,960
Ft. Worth .....	11,018,898
Milwaukee .....	10,455,609
San Diego .....	9,890,582
Boston .....	9,841,894
Tacoma .....	9,757,784
San Francisco .....	9,744,566
Indianapolis .....	9,230,339

## North Pacific Planning

Extension of wartime collaboration to the peacetime development of the vast region of northern British Columbia, Yukon Territory and Alaska is the object of an international study announced by the Joint Economic Committees of Canada and the United States.

Immediate objective of the study is to gather basic information on the region and develop for the consideration of the Joint Economic Committees, proposals for Canadian-United States economic cooperation in the development of resources, the improvement of standards of living, settlement and other undertakings.

The study is being carried on by cooperating officials of the governments of the United States and Canada, with the active assistance of officials of the governments of British Columbia and Alaska. James C. Rettie, of the Portland, Oregon, office of the National Resources Planning Board, and Charles Camsell, Deputy Minister of Mines and Resources, Ottawa, have been appointed to organize and direct, under

the Joint Economic Committees, the carrying out of the study.

The North Pacific region involved contains about 1,000,000 square miles and 100,000 people. The war is contributing additional population and improved joint transportation facilities, the advantages of which it should be possible to preserve for peacetime development.

## Manganese Concentrator

Construction of a \$6,000,000 manganese concentrator is proceeding near Las Vegas, Nev., by Manganese Ore Co., a subsidiary of the M. A. Hanna Co. of Cleveland.

Designed for treatment of 1000 tons of ore daily, the plant has three rotary kilns, two mills, two crushers, seven thickeners and gas producers. Four hundred electric motors and 320 pumps will be used.

Mining is conducted in open pits with electric shovels and trucks. Approximately 100 men are employed and this force will be increased to about 500 in the mine and plant when production starts.

Building of the company town has been completed. It includes a mess hall, bunkhouses and 75 dwellings, all air-conditioned. Water is piped from Lake Mead.

The town is served by a railroad spur and paved highway. The plant is owned

by Defense Plant Corporation but will be operated by Manganese Ore. Extensive reserves of commercial ore are reported available.

## Master Los Angeles Plan

A master plan for development of Los Angeles county industry, formulated with the aid of engineers, public utility and railway officials, faculty members of local universities and colleges, financial authorities and technologists from the entire industrial community, is announced by the Los Angeles County Chamber of Commerce.

It was found that there are 98 basic resources and materials native to this area, while it is possible to bring in 33 more domestic materials by rail and water, and 24 additional items can be imported from foreign countries.

There are 39 basic industries that must be established to lay a solid foundation for the future, according to the Chamber, and 15 new basic industrial plants needed for more efficient war production. Facilities should be available, it was declared, for local manufacture of the following products:

Aluminum sheets, cork, airplane, engines, marine engines, ferro manganese, ferro tungsten, magnesium extrusions, magnesium forgings, magnesium sheets,

(Continued on Page 34)

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## THE WEST ON ITS WAY

(Continued from Page 33)

plastic powders and sheets, plywood, propellers, guayule rubber, tool steel and lathe tools.

*This is only a partial list of the industrial projects throughout the 11 Western States*

## ARIZONA

**EVAPORATIVE COOLING**—J. Herman Co., 1349 East Vernon Ave., Los Angeles, will install evaporative cooling systems in hospital buildings at an Air Force Flying School in Yuma county, and an A. F. Flexible Gunnery School in Mohave county. Contracts, \$50,000 each, awarded by U. S. District Engineer Office.

**UNDERGROUND CABLE**—Tucson Gas, Electric Light & Power Co., Tucson, will install an underground cable at an airfield in Pima county at a cost of less than \$50,000. Contract by U. S. District Engineer Regional Office, Phoenix.

**OPERATING BASE BUILDINGS**—Edward L. Thornburg, 8941 Santa Monica Blvd., Los Angeles, will construct buildings for an Auxiliary Operating Base in Mohave county. \$500,000 contract awarded by U. S. District Engineer Office, Los Angeles.

**ELECTRICAL SYSTEM**—R. A. Wattson Co., 1026 No. McCadden Place, Los Angeles, will install an electrical system at an operating base in Mohave county. U. S. District Engineer Office, Los Angeles, awarded the \$50,000 contract.

**TWENTY BUILDINGS**—Bailey and McCoy, 1130 Lowell Ave., Tucson, will construct approximately 20 buildings and install utilities in Coconino county. Contract for less than \$500,000 awarded by U. S. District Engineer Office, Albuquerque, N. M.

**WAREHOUSE**—James B. Donaldson, Heard Bldg., Phoenix, will construct a warehouse. \$50,000 contract awarded by U. S. District Engineer, Phoenix.

**FUELING SYSTEM**—E. W. Duhamel, 3719 North Central Ave., Phoenix, has been awarded a \$50,000 contract by the U. S. District Engineer

Regional Office, 401 West Adams, Phoenix, for expansion of an A. F. gasoline fueling system at an airfield in Maricopa county.

**HOUSING CONSTRUCTION**—Elder R. Morgan Co., Bisbee, has been awarded a \$240,874 contract by the Douglas Housing Authority, Douglas, for the construction of 90 dormitory apartments and 60 housing units.

**MESS HALL**—Del E. Webb Construction Co., 320 So. 23rd Ave., Phoenix, has been awarded a \$50,000 negotiated contract by the U. S. District Engineer Office, Los Angeles, for construction of a civilian mess hall at an airfield in Maricopa county.

**HOSPITAL WARD**—Paul E. Griffin, 7219 Sepulveda Blvd., Van Nuys, will construct a hospital ward and walk at an Air Force Flying School in Yuma county. Contract for less than \$50,000 awarded by U. S. District Engineer Office, Los Angeles.

**SPEED TRAINER BUILDINGS**—Del E. Webb Construction Co., 302 So. 23rd Ave., Phoenix, has been awarded a negotiated contract at \$50,000 by the U. S. District Engineer Office, Los Angeles, for construction of two speed trainer buildings in Mohave county.

**ARMY BUILDINGS**—Tifal, King & McKee, 1724 Grand Ave., Phoenix, will construct additional army buildings at a gunnery base in Pima county. Contract for less than \$100,000 by U. S. District Engineer Area Office, Phoenix.

**TARGET RANGE**—Morrison-Knudsen and M. H. Hasler, Kingman, will construct a target range at an Air Force Flexible Gunnery School in Mohave county. The contract for less than \$1,000,000 was awarded by the U. S. District Engineer Office, Los Angeles.

## CALIFORNIA

**EXTENDING PRESS PLANT**—Myers Bros., 3407 San Fernando Road, Los Angeles, has been awarded the contract for extension of the forge press plant of the Earle M. Jorgensen Co., 10,510 So. Alameda St., at a cost of \$100,000.

**CAFETERIA**—Jere Strizek, 320 Judah St., San Francisco, will construct a cafeteria at a military location in the North San Francisco Bay area. Contract, negotiated, was awarded by the U. S. Army Engineer Office, San Francisco.

**DEPOT SUPPLY BUILDINGS**—R. V. Mead, 633 So. La Brea Ave., Los Angeles, has been awarded a \$500,000 contract for the construction of depot supply buildings at an air depot in San Bernardino county. Awarded by U. S. District Engineer Regional Office, San Bernardino.

**FUELING SYSTEM**—John A. Klarquist, 618 So. Western Ave., Los Angeles, has been awarded a \$100,000 contract by the U. S. District Engineer Regional Office, Banning, for the construction of an A. F. gasoline fueling system at an airport in Riverside county.

**FENCING IN SCHOOL**—Ben Schiewe, 361 No. Fuller, Los Angeles, will construct fencing and walks at a factory training school in Los Angeles. Contract for \$50,000 awarded by U. S. District Engineer Office, Los Angeles.

**PAINTING**—Foster & Kleiser Co., 1550 West Washington, Los Angeles, have been awarded a \$50,000 negotiated contract by the U. S. District Engineer Office, Los Angeles, for painting in Los Angeles county.

**AVIATION FACILITIES**—Radich & Brown, San Leandro Blvd., San Leandro, have been granted a \$307,000 contract by the Bureau of Yards and Docks, Navy Dept., for the construction of aviation facilities in Stanislaus county.

**FLOATING DRYDOCK**—Chicago Bridge & Iron Co., Chicago, Ill., have been awarded a \$5,790,000 contract by the Bureau of Yards and Docks, Navy Dept., for the construction of a steel floating drydock in Humboldt county.

**CLINIC BUILDINGS**—Allied Contractors, 9700 West Pico Blvd., Los Angeles, have been awarded a \$50,000 contract for construction of clinic buildings in San Bernardino and Riverside counties. By U. S. District Engineer Regional Office, Banning.

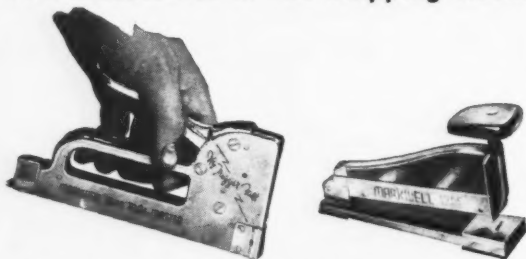
**CITRUS MACHINE MFRS.**—The Brown Citrus Machinery Co., 720 Ceres Ave., Los Angeles, will occupy the building at 401 So. Greenleaf Ave., Whittier, to manufacture citrus machinery for the extraction of orange, lemon and grapefruit juices.

**RIFLE RANGE**—United Concrete Pipe Corp., 1347 West 20th St., Los Angeles, will construct a rifle range in Los Angeles county. \$50,000 contract by U. S. District Engineer Office, Los Angeles.

**RADIO REPAIR BUILDING**—J. O. Oltmans & Sons, 810 East 18th St., Los Angeles, will construct a \$100,000 radio repair building in San Bernardino county. Contract by U. S. District Engineer Regional Office, San Bernardino.

**TIMBER BRIDGE**—Modern Builders Construction Co., 2812 Long Beach Blvd., Long Beach, has been awarded a \$124,319 contract by the Long Beach Harbor Commission for the reconstruction of a treated timber bridge on Ocean Blvd.

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## Your Chemical Reporter



In these fast changing times, it is most difficult for any of us to keep fully posted on all of the regulations and developments pertaining to the chemical industry. This monthly column will keep you up to date on news of chemicals especially as it affects the West.

### New Service for Pacific Northwest

To overcome wartime delays in transportation and relieve the resulting shortage of metal containers, Stauffer's new plant at North Portland, Ore., has installed tanks for bulk storage of SULPHURIC ACID and facilities for filling and shipping this strategic product in iron drums.

Pacific Northwest war industries who have had to rely upon sources nearly a thousand miles from their operations will welcome this timely "neighborhood" service.

### Substitutes

Substitutes are the order of the day.

With everything becoming more and more restricted, the up-and-coming firm is hard pressed to keep up production with available materials. Sometimes adequate substitutes are found. In a few cases these substitutes are better than the original. Take the case of the Government agency which was specifying chlorates for weed killing and couldn't find an available supply. Stauffer talked them into trying borates for the particular job in question, and the results were as good, if not better, and at a lower cost!

Now that ammonium sulphate and diammonium phosphate are needed for more important things, textile chemists have worked out suitable flame-proofing methods, using borax and boric acid as substitutes. Work is now under way, using these substitutes, to make fire retarding lumber and even fire-retarding paints.

### Some Chemicals Easing Up

Several bright spots have appeared in the chemical market to offset the gloom of allocations and restrictions. SODA ASH, formerly very scarce, is easing up because of new production on the Coast. BORAX, also tight in 1941 and 1942, is now plentiful because of the curtailment of porcelain enameling. New production of AMMONIA and AMMONIUM COMPOUNDS in recently completed war plants will release more ammonia for fertilizers for agriculture in the West.

Stauffer recently acquired some additional acid production facilities in Southern California, and is also increasing its current capacities of other plants to take care of the heavier demands.

### How to Help the Container Shortage

The universal cry these days seems to be "Return Empty Containers Promptly." Besides the inability to get new ones, containers spend a lot more time in transportation and therefore do less work than formerly. Thousands of containers have gone overseas to the armed forces, which takes them out of circulation.

But here's a tip to speed things up a little. Where containers are returned at your expense, kindly ship them prepaid. This eliminates delay and lost motion in having to deduct freight from your credits. Also, send the containers to the proper warehouse or plant, and a copy of bill of lading and debit memo to your supplier's office. Believe it or not, large loads of empty containers are occasionally consigned to multi-story office buildings in the heart of financial districts because the supplier's office address was the only one shown.

### Want Foreign Patents?

Our Research Department suggests that you might be interested in examining the list of seized patents now in the hands of the Alien Property Custodian. There are some 50,000 of them, some of which may be applicable to your operations. These patents are leased to any individual or company on a non-exclusive royalty-free basis for the life of the patent.

Your Chemical Reporter will bring you helpful chemical information each month through the courtesy of Stauffer Chemical Company, San Francisco, Los Angeles and North Portland.

**UNDERGROUND SHELTERS**—Case Construction Co., San Pedro, will construct reinforced concrete underground shelters and tower foundations in Los Angeles county. U. S. District Engineer Office, Los Angeles, awarded the \$100,000 contract.

**TRAINING FACILITIES**—Pacific Truck Service, Inc., 646 Park Ave., San Jose, have been awarded a negotiated contract by the U. S. Army Engineer Office, San Francisco, for training facilities and roads at an army camp in Central California.

**BUILDING CONSTRUCTION**—Sierra Construction Co., 25 Allen St., Pasadena, has been awarded a \$500,000 contract by U. S. District Engineer Office, Los Angeles, for construction of buildings, alterations and additions, at a training center in Los Angeles county.

**FENCING AND WALKS**—W. P. Wright, 6238 San Vicente Blvd., Los Angeles, has been awarded a \$50,000 for construction of fencing, walks and macadam surfacing at a factory training school in Los Angeles county, by U. S. District Engineer Office, Los Angeles.

**MANUFACTURE FRUIT JARS**—The Alexander H. Kerr and Co., Inc., will open a factory branch in Santa Ana, if WPB priorities are obtained. The plant will be located in the former Standard American Glass site at Standard and St. Andrews place. Approximately 100 persons will be employed.

**SIX WOOD TUGS**—The Eureka Ship Builders, Inc., Eureka, have been awarded a contract for six 65-foot wooden tugs to cost \$35,790 each.

**PROPERTY FOR REFINERY**—The Sun Glow Oil Co. have purchased the four-acre tract of land east of the Livingston city limits for a large refinery and lubricating oil and grease plant. Willard Foster, manager, claims they will need more acreage, and that they intend to purchase adjoining land.

**LOW PRESSURE CHAMBER**—M. J. Brock & Sons, 107 No. Larchmont Blvd., Los Angeles, will construct a low pressure chamber in San Bernardino county. Negotiated contract in an amount less than \$50,000 awarded by U. S. District Engineer Regional Office, San Bernardino.

**CAMOUFLAGING**—R. E. Niles, 3222 Los Feliz Blvd., Los Angeles, has been awarded a negotiated contract by the U. S. District Engineer Office, Los Angeles, for camouflage work in Los Angeles county to cost less than \$50,000.

**SELL SEA FOOD CO.**—Paladini Sea Food, Inc., 1320 Newton Ave., Los Angeles, have purchased the Lido Sea Food Co., 516 Thirteenth St., Santa Ana.

## COLORADO

**HOUSING PROJECT**—R. E. Wear, Montrose, has been granted a \$215,484 contract for construction of a housing project in Uravan, by Federal Public Housing Authority, Kansas City, Mo.

**NINE BUILDINGS**—Newstrom-Davis & Co., 2000 West Eighth Ave., Denver, has been awarded a contract by the U. S. District Engineer Office, Denver, for the construction of nine additional buildings in Pueblo county.

**REMODELING CANTONMENTS**—Johnson-Leck Co., Minneapolis, Minn., will remodel cantonment buildings into dormitories. Contract in excess of \$50,000 awarded by U. S. District Engineer, Omaha, Neb.

**ADDITION TO POST OFFICE**—E. B. Jones, Jr., 1010 So. Josephine St., Denver, will construct an addition to a post office in Denver county. Contract awarded by U. S. District Engineer Office.

**BUS STATION**—Larsen & Udeson, Denver, have been awarded a negotiated contract by the U. S. District Engineer Office, Denver, for the construction of a bus station in Denver county.

**MEDICAL BUILDING**—Brown, Schrepferman & Co., 240 Washington St., Denver, will construct an examination and sick call building. Contract awarded by U. S. District Engineer Office, Denver.

**MORE BUILDINGS**—Frank M. Kenney, 56 Steel St., Denver, will construct five more buildings in Otero county. Contract awarded by the U. S. District Engineer Office, Denver.

**HOUSING PROJECT**—R. E. Wear, Montrose, will construct facilities at Naturita. Contract at \$177,875 awarded by Federal Public Housing Authority, Kansas City, Mo.

## IDAHO

**MILITARY BUILDINGS**—J. W. Brennan, Pocatello, has been awarded a \$175,000 contract by the U. S. Army Engineers, Portland, Ore., for construction of buildings and other facilities at a military site in Power county. He has awarded the following sub-contracts: Rocky Mountain Roofing Co., Geo. C. Tway & Co., Campbell Paint Shop, C-L Electric Co., Intermountain Plumbing Co., all in Pocatello.

**STORAGE ADDITIONS**—Aqua Systems, Inc., 701 East Third St., Los Angeles, have been granted a \$50,000 contract by the U. S. Army Engineers, Portland, for alterations and additions to storage and fueling system at a military site in Ada county.

## THE WEST ON ITS WAY

**MONTANAN BUYS IDAHO MINE**—A. D. Cobb, Great Falls, has purchased lease and mining equipment from Trueman Higginbotham who has been operating the Idaho-Continental mine in the Porthill district. G. L. Postle, CutBank, Mont., will manage the property.

**BUILDINGS FOR ARMY**—C. Merrill Co. & C. H. Elle, Pocatello, have been awarded a \$25,000 contract by the U. S. Army Engineers, Portland, for construction of buildings at a military site in Power county.

## MONTANA

**HOUSING PROJECT**—Cahill-Mooney Construction Co., 342 So. Main St., Butte, have been awarded a contract by the Federal Public Housing Authority for the construction of a housing project in Anaconda which includes 50 buildings.

## NEVADA

**OFFICERS' CLUB**—M. J. Brock & Sons, Inc., and Davies & Keusder, 107 No. Larchmont Blvd., Los Angeles, will construct an officers' club in Clark county. U. S. Regional Engineer Office, San Bernardino, awarded the contract for less than \$50,000.

**LOW PRESSURE CHAMBER**—M. J. Brock & Sons and Davies & Keusder, 107 No. Larchmont Blvd., Los Angeles, have been awarded a negotiated contract by the U. S. District Engineer Regional Office, San Bernardino, in an amount less than \$50,000 for constructing a low pressure chamber in Clark county.

**REHABILITATING CONTROL TOWER**—Ira P. Fulmor, 1003 Santa Fe Ave., Los Angeles, will air condition and rehabilitate a control tower in Clark county. Contract for less than \$50,000 by U. S. District Engineer Regional Office, San Bernardino.

**FUELING SYSTEM**—Aqua Systems, Inc., 701 East Third St., Los Angeles, have been awarded a \$50,000 contract for construction of an A. F. gasoline fueling system at a gunnery school in Clark county. By U. S. District Engineer Regional Office, San Bernardino.

**HOUSING PROJECT**—O. J. Shearer, Las Vegas, has been awarded a \$690,133 contract by the National Housing Agency, San Francisco, for the construction of 300 single dwelling housing units near the Basic Magnesium plant in Las Vegas.

## NEW MEXICO

**175 DWELLING UNITS**—J. J. Bollinger Construction Co., 922 Branniff Bldg., Oklahoma City, Okla., has been awarded a \$402,112 contract by the Federal Public Housing Authority for the construction of 175 family dwelling units at Deming.

**RESTAURANT**—E. S. McKittrick Co., Inc., 7839 Santa Fe Ave., Huntington Park, Calif., has been awarded a contract for the construction of a restaurant and office building in McKinley county to cost less than \$50,000. Contract by U. S. District Engineer Office, Albuquerque.

**TWO WAREHOUSES**—W. T. Davis, Inc., Albuquerque, will construct two warehouses, each 50x192 feet, in Bernalillo county. Contract for less than \$100,000 by U. S. District Engineer Office, Albuquerque.

**DUST TREATMENT**—Walter L. Denison, 207 So. Hermosa Ave., Albuquerque, has been awarded a \$100,000 contract by the U. S. District Engineer Office for dust palliative treatment at an airfield in Curry county.

## OREGON

**CONVERTING**—Four machine shops in Hood River are making flange blanks to be installed in Victory ships. They are: Unger's, Ideal Grader & Nursery Co., Windmaster Gun Shop, and Howell Brothers.

**DEHYDRATING PLANT**—The Blue Lake Producers' Cooperative, Blue Lake, have started construction of a second dehydrating plant for processing vegetables. It will be in operation in connection with the West Salem plant.

**AIRPORT WORK**—Porter W. Yett, Portland, has been awarded a contract by the Civil Aeronautics Administration, Boeing Field, Seattle, Wash., for general work at the Columbia County Airport near Scappoose, to cost \$149,456.05.



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## THE WEST ON ITS WAY

**AUDITORIUM**—W. J. Wagner, 411 Morningside Ave., Albuquerque, will construct an auditorium at an airfield in Bernalillo county to cost \$50,000. Contract awarded by U. S. District Engineer Office, Albuquerque.

**TOBACCO KITS**—Larus & Brother, Inc., have established a plant on the main floor of the Larmer warehouse at 889 North Liberty St., Salem, for the assembling of tobacco kits destined for oversea soldiers.

**WOODEN CHESTS**—Baker War Industries, Baker, have started the production of wooden chests for the army. The chests are being made of local pine lumber.

**LIFE FLOATS**—American Life Float Co. is moving into the Oregon Handle Company factory on Blaine and Franklin in Newberg. Their plant in Gresham had been destroyed by fire.

**PRUNE PLANT PURCHASED**—Rosenberg Brothers, San Francisco, Calif., have purchased the Dallas Prune Packing plant owned by the Polk County Cooperative Prune Growers Association. The plant is to be reconditioned for packing the 1943 crop.

## UTAH

**CHECKING STATION**—Ellis W. Barker, Ness Bldg., Salt Lake City, will construct a checking station at an air depot in Weber county. Contract for less than \$50,000 awarded by U. S. District Engineer Office, Salt Lake City.

**FIRE STATION**—J. H. Haslam, 4212 Highland Drive, Salt Lake City, has been awarded a negotiated contract by the U. S. District Engineer Office, Salt Lake City, for the construction of a fire station in Tooele county, to cost \$50,000.

**ENGINE HOUSE**—Intermountain Securities Corp., 513 First National Bank Bldg., Salt Lake City, has been awarded a negotiated contract by the U. S. District Engineer Office, Salt Lake City, for the construction of an engine house at an air depot in Weber county. Approximate cost, \$40,000.

**SPRINKLER SYSTEM**—Viking Automatic Sprinkler Co., 149 West Second South, Salt Lake City, will install an automatic sprinkler system at a relocation center in Millard county. Contract by U. S. District Engineer Office, Salt Lake City.

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- ½ TO 10 TON MODELS

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**PHOTO LAB**—J. H. Haslam, 4212 Highland Drive, Salt Lake City, will construct a photo laboratory in Tooele county. Contract for less than \$50,000 by U. S. District Engineer Office, Salt Lake City.

**OIL STORAGE**—Wade Bros., 457 Fifteenth St., Ogden, will construct an oil storage building in Weber county to cost \$50,000. Contract awarded by U. S. District Engineer Office, Salt Lake City.

**TRAILER SITE**—Patti-MacDonald Construction Co., 1114 Broadway, Kansas City, Mo., have been awarded a \$79,500 contract by the Federal Public Housing Authority, Kansas City, for trailer site development in Tooele county.

## WASHINGTON

**TESTING**—Western Pipe & Steel Co., San Francisco, has been granted a \$109,931 contract for fabrication, erection and testing of steel surge tanks and testing welded steel plate pipe for the tunnel shaft liners for the LaGrande Tunnel and power house. Let by the Tacoma Board of Contracts and Awards.

**BUYS TIMBER COMPANY**—Anacortes Veneer Co., Anacortes, have purchased all the stock in the Cascade Timber Co., Tacoma, whose principal timber holdings are in the vicinity of Sellick in King county. Fred Johnson is manager of Anacortes.

**INSTALLS VINEGAR PLANT**—Valley Evaporating Co., Oroville, are expanding. Besides doubling the capacity of the apple drying part of the plant, they are installing machinery to make vinegar from peelings and cores.

**ANOTHER SHIPYARD**—Hoquiam Shipyards, Inc., Hoquiam's second shipyard, is clearing the old E. K. Wood mill site for construction of ways. In addition to an original \$70,000 contract for construction of 10 barges, they have obtained another for \$285,000 for 20 barges with houses for the army transport division.

**COLD STORAGE**—Hanson & Weidner, Spokane, have been awarded a \$50,000 contract by the U. S. Army Engineers, Seattle, for construction of a cold storage building, subsistence storage and warehouse at a military site in Spokane county.

**DRILLING WELL**—Roscoe Moss, Los Angeles, will drill a well in Pierce county. Contract for less than \$50,000 awarded by U. S. Engineers, Seattle.

**MARINE CONSTRUCTION**—Manson Construction & Engineering Co., 821 Alaskan Way, Seattle, have been awarded a negotiated contract



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## THE WEST ON ITS WAY

by the U. S. Army Engineers, Seattle, for marine construction at a military site in King county. Cost at less than \$50,000.

**PHOTOGRAPHIC LABORATORY**—Washington Lumber Co., 3447 Fourth St., Seattle, will construct a \$50,000 photographic laboratory at a military site in Snohomish county. U. S. Army Engineers, Seattle, awarded the contract.

**UTILITY YARD**—Gaasland Construction Co., 1161 Ellis, Bellingham, have been awarded a negotiated contract in an amount between \$50,000 and \$100,000 for facilities for a utility yard at a military site in Grant county. By U. S. Army Engineers, Seattle.

**FUELING SYSTEM**—W. G. Clark, 408 Aurora Ave., Seattle, has been awarded a contract by the U. S. Army Engineers, Seattle, for construction of an A. C. gasoline fueling system at a military site in Kitsap county to cost between \$50,000 and \$100,000.

**CONCRETE CONSTRUCTION**—McAtce & Heath, Spokane, will carry out concrete construction in Grant county. U. S. Engineers, Seattle, awarded the contract of between \$100,000 and \$500,000.

**OFFICE BUILDING**—Boeing Aircraft Co. plant No. 2, Seattle, is constructing a new office building.

**PAINTING**—Clyde Stricker, 828 Eleventh Ave., Spokane, has been awarded a \$50,000 contract by the U. S. Engineers for painting at a military site in Spokane county.

**MILITARY CONSTRUCTION**—The U. S. Engineers, Seattle, have awarded the following contracts:

Nelse Mortensen & Son, 1021 Westlake No., Seattle, \$50,000 for construction of foundation and flooring for buildings.

Sam Bergeson, Wick & Dehlgen, Box 971, Route 1, Tacoma, less than \$100,000 for miscellaneous buildings in Snohomish county.

Henrick Valle Co., Seattle, \$50,000 for building in King county. Chisholm & Eiford, Box 54, Bellingham, \$50,000 for building in Whatcom county.

Sullivan, Lynch & Hainsworth Construction Co., 2222 McGilvray Blvd., Seattle, \$50,000 for housing facilities in Clallam county.

A. F. Mowat Construction Co., 1331 Third Ave., Seattle, \$50,000 for building in Kitsap county.

General Construction Co., 3840 Iowan, Seattle, less than \$100,000 for terminal facilities in King county.

## WYOMING

**HOUSING PROJECT**—Green Bros. Construction Co., Worland, have been awarded a \$626,542 contract by the Federal Public Housing Authority, Kansas City, Mo., for the construction of a 325-unit housing project in Cheyenne.

**PRISON CAMP**—Prouty Bros. Engineering Co. are preparing plans for the construction of a prisoners' camp in Converse county which will cost approximately one million dollars.

## OPPORTUNITY SECTION . . .

Priorities regulations have made it practically impossible to secure new machinery for industrial operations unless a plant is doing 100 per cent work on war projects. Even then, long delays are in prospect. The government is urging full use of existing machinery. Listed here are "machinery opportunities" immediately available here on the Pacific Coast.

### SQUIRREL CAGE MOTORS IN STOCK

75 HP 3600 RPM 440-Volt Howell Ball Bearing  
40 HP 1800 RPM 440-Volt Fairbanks Morse  
40 HP 1800 RPM 220/440-Volt Northwestern  
40 HP 900 RPM 440-Volt Type CS Westinghouse  
35 HP 1800 RPM 440-Volt Type KT Gen. Electric  
30 HP 900 RPM 220-Volt Type KT Gen. Electric  
30 HP 1200 RPM 220/440-Volt Type ST U.S.  
25 HP 900 RPM 220/440-Volt Type KT Gen. Elec.  
25 HP 1200 RPM 220/440-Volt Type KT Gen. Elec.  
25 HP 3600 RPM 220/440-Volt Type H Fair. Morse  
20 HP 900 RPM 440-Volt Type ARX A. Chalmers  
20 HP 1200 RPM 220/440-Volt Type CS West.  
15 HP 900 RPM 220/440-Volt Type CS West.  
15 HP 1800 RPM 220/440-Volt Type FR U.S.  
10 HP 1800 RPM 220/440-Volt Type FR U.S.

### SLIP RING MOTORS IN STOCK

75 HP 900 RPM 440-Volt Type HV Fair. Morse  
30 HP 900 RPM 440-Volt Type FRVI, U. S. Intermittent  
22 HP 1200 RPM 440-Volt Type FRVI U. S. Intermittent  
1½ HP 1200 RPM 220-Volt Type MT Gen. Elec.

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## MACHINERY SALE MOTORS

- 1—260 H.P. Synchronous G.E. 225 RPM, 2200 volts, 210 KVA.
- 2—250 H.P. Westinghouse, Type CS, 290 RPM, 2200 volts.
- 1—200 H.P. Slip Ring G.E. 600 RPM, 440 volt motor.
- 1—200 H.P. G.E. Type I, 600 RPM, 440 volts.
- 1—200 H.P. G.E. 1800 RPM, 440 volt motor.
- 1—150 H.P. Westinghouse, Type CS, 1800 RPM, 440 volts.
- 1—100 H.P. Slip Ring, G.E., 720 RPM, 440 volts.
- 1—62½-ft. 2½-inch Double Leather Belt.
- 1—60 H.P. G.E. Type I, 1800 RPM, 440 volts.
- 1—50 H.P. Vertical Fairbanks Morse, 1200 RPM, 220 volts, solid shaft.
- 1—35 H.P. Crocker Wheeler, 1200 RPM, 220 volts.
- 1—25 H.P. G.E. Type I, 600 RPM, 220 volt motor.
- 1—10 to 30 H.P. Slip Ring, Westinghouse, Type MW, 860 RPM, 440 volts.

### GENERATORS, BLOWERS, WATER PUMPS

- 1—600 Amp, 7500 volt, Westinghouse Type F3 oil circuit breaker.
- 1—300 H.P. Triumph Water Wheel with governor, 50 ft. head.
- 1—200 KW, Westinghouse Alternating Current Generator, 900 RPM, 440 volts, 60 cycle, 3 phase.
- 1—150 H.P. Fairbanks Morse, Type B, 720 RPM, 440 volts.
- 1—150 H.P. Westinghouse Type CS, 720 RPM, 2200 volts.
- 1—No. 70 ILG Blower, 17,430 CFM, direct to 6 H.P. 340 RPM, 3 phase motor.
- 2—75 KVA Transformers, G.E. Type H, 6600 to 120/240/480 volts, 60 cycle.
- 1—50 H.P. Single Drum Mine Hoist.
- 1—45 K.W. Alternating Current Generator, U.S. Electric, 1200 RPM, 440 volts, 3 phase.

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- 3—10 K. V. A. General Electric

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- 8—3 K. V. A. Westinghouse
- 12—5 K. V. A. Westinghouse
- 4—7½ K. V. A. Westinghouse
- 3—10 K. V. A. Westinghouse
- 1—37½ K. V. A. Westinghouse

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A. Horne Machinery Co., dealing in fabricated products and construction equipment and featuring used equipment, has been established at 1188 Harrison St., San Francisco. Mr. Horne was for eight years with the L. H. Butcher Co., and for the past four years, sales manager of Machinery & Equipment Co., San Francisco.

Fray Machine Tool Co., Glendale, Calif., manufacturer of milling machines and other precision shop equipment, have announced their incorporation for \$1,000,000. J. H. Richards has been appointed president; Dr. Lock Hale, secretary-treasurer; O. W. Weyman, vice president.

Jones & Laughlin Steel Corp., Pittsburgh, have appointed R. C. Garvey as district sales manager at San Francisco, succeeding C. P. Hensley, who retired. E. S. Holden has been appointed resident manager at the Denver sales office.

Columbia Steel Company's director of public relations, Charles W. Huse, has been called to active duty as a first lieutenant in the U. S. Marine Corps. Frank A. Burns, assistant to Huse, will take over.

MacMillan Petroleum Corp., have appointed Mitchell, Lewis & Staver as distributors for Ring Free motor oil in the Portland and Salem districts.

Westinghouse Electric & Mfg. Co., have announced the following appointments: Robert S. Sloan, welding specialist in the North Pacific area, with headquarters in Seattle; Grant A. Wilswell as supervisor of industrial relations; J. M. Zimmerman, staff manager for manufacturing

and repair department, Pacific Coast district, both with headquarters in Emeryville, Calif.; and Henry D. Moreland, X-ray division manager at Portland, now heads the department with headquarters in East Pittsburgh, Penn.

H. W. Clarke, who resigned recently as vice president of McGraw-Hill Publishing Co., Inc., and publisher of "Coal Age," engineering and mining journal, and affiliated mining publications, has leased offices in the News-Week Bldg., Times Square, New York City. He will announce new plans and associates in the near future.



The McCarty Co., Los Angeles, have appointed Clifford A. Faust to the position of account executive. Formerly, he was in charge of transportation advertising for the Ohio Brass Co., Mansfield, Ohio.

C. R. Daniels, Inc., New York City, have opened a western office in Los Angeles, located at 811-815 Traction Ave. A. Barr is in charge. They feature canvas products — tarpaulins, bags, and covers. Their San Francisco office is at 580 Market Street.

General Electric Co., has appointed R. W. Beard, of the San Francisco office, as assistant to the manager of the company's lighting department in Schenectady, New York.

Pneumatic Machinery Company, Inc., are moving to 2100 East 25th St., Los Angeles, from 707 East 61st St. The new telephone number is KImball 6264.

Glenn-Roberts Co., Oakland, Calif., manufacturers of welders, have opened a branch factory at Indianapolis to be headed by James E. Vosburgh.

Cooper-Bessemer Corp., Mt. Vernon, Ohio, have transferred Philip W. Mettling, compressor expert, to their branch office at 640 East 61st St., Los Angeles.

Moore Machinery Co., San Francisco, have acquired the services of George A. Pickel, formerly northwest manager for Sterling Motor Co., at Portland.

Transmission Engineering Co. have opened a Los Angeles office at 1151 South Broadway which will be under the supervision of M. F. Colgrove. The following firms will be represented in the Southern California area: Galland-Henning Mfg. Co. (Baler Div.) of Milwaukee, Wisconsin; Struthers-Wells Corp. of Warren, Penn.; United Iron Works of Oakland, Calif.; Yale & Towne Mfg. Co. (Pump Div.) of Stamford, Conn.; Chicago Tram-rail Co., Chicago, Ill. Mr. Colgrove was formerly manager of the Bean-Cutler Div. of Food Machinery Corp., Los Angeles.

The James H. Knapp Co., industrial furnace manufacturers of Los Angeles, have appointed W. C. Matheson as their exclusive engineering and sales representative in Northern California and the Bay area. Mr. Matheson's address and phone number are: 1045 Bryant St., KLondike 21077.

Detroit Broach Co., Inc., have established a branch plant at 115 North Robertson Blvd., Los Angeles, for the manufacturing and servicing of broaching tools used in cutting intricate grooves and special shapes in metal.

Graton & Knight, producers of leather belting and leather products have granted a distributor franchise to Pacific Mill & Mine Supply Co., of Fresno and San Francisco.

The Kelly Ball Bearing Co., 651 Turk Street, San Francisco, have been appointed authorized distributor for Timken Roller Bearings. They also handle Hoover, New Departure and Hyatt ball bearings.

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## YOURS FOR THE ASKING

**Service Data**—Describes how new, time-saving cleaning materials, de-scaling methods and related techniques are being used successfully to conserve manpower, shorten shut-down time and step up efficiency on 41 different plant house-keeping and sanitation jobs common to practically all plants in all industries engaged in war work. Prepared in data sheet form for convenient, quick reference, guide outlines the material used, method followed, time saved, elimination of fire or other hazards and other advantages gained. *Oakite Products, Inc., 1001 East First St., Los Angeles, Calif.*

**You owe it to yourself to keep posted—only the efficient business survives under the strain and pressure of the war effort. Literature listed in these columns may be just the answer to your need for greater production, substitute materials or knowledge of how to care for your equipment. Just drop a note to Western Industry, 503 Market St., San Francisco, and copies will be forwarded to you. If you do not use business letterheads, please name your company affiliation.**

**Rubber Conservation**—"How to Lengthen the Life of Mechanical Rubber Goods" contains field-practical pictures and explanations of proven ways to increase service from rubber belting and hose, and concludes with a new idea in conservation—marking of industrial rubber in daily use within the plant by means of attractively designed tags. *Pioneer Rubber Mills, 355 Sacramento St., San Francisco, Calif.*

**Instruction Book**—"Lady—Will You Give a Lift?" is an instruction pamphlet for women operators of power industrial trucks. Pamphlet gives technical instruction in an easy, direct conversational style. The sequence emphasizes that the woman who does a first-class job of running a truck in a war plant is accomplishing a great deal more than operating a machine during an eight-hour shift. Continuity is maintained through large photographic illustrations of women at the truck controls with detailed directions on starting, steering, hoisting, lowering and other mechanical operations. *The Elwell-Parker Electric Co., Cleveland, Ohio.*

**Lubrication**—Two brochures available. A leaflet describing "Lubrikart" and a 50-page catalog of industrial lubrication equipment. Feature of catalog is a quick comprehensive selection guide provided for convenience in determining the lubricating equipment best adapted to requirements. Equipment is charted in accordance with the kind of lubricants pumped, container capacity, operating power and pressure. The leaflet tells about "Lubrikart" which is designed to reduce maintenance time to a minimum, bringing a complete power lubrication department to any machine in the plant. *Alumite Division, Stewart-Warner Corp., 1826 Diversey Parkway, Chicago, Ill.*

**Transfer Switch**—Eliminates interruption and lag in the transfer of a load from normal to emergency service. It is so designed that all contacts are carried on one shaft and operate in the same direction, and arranged so that at all times, the contacts are either in the normal or emergency position—no "off" position is possible. Bulletin No. 720 gives detailed explanation and specifications. *Zenith Electric Co., 152 West Walton St., Chicago, Ill.*

**Redwood Pipe**—By means of tables, text and drawings, bulletin deals with the problem of installation of four types of redwood pipe: continuous stave pipe, machine banded pipe, bored pipe and redwood lined metal pipe. Adaptable to common, daily usage, in power and chemical plants, paper mills, power houses and similar industries. *California Redwood Association, 405 Montgomery St., San Francisco, Calif.*

**Hydraulic Pumps**—Infinitely variable delivery hydraulic vane pumps, having "standard" mounting to permit them to be used as replacements for other pumps on existing equipment is the subject of Bulletin "Hy-2." Contains an illustration of a portion of the type of dual-vane arrangement which, it is claimed, eliminates overheating, reduces wear and permits long period operation at excessive pressures. *Hydra-Motive, Inc., 723 E. Milwaukee Ave., Detroit, Mich.*

**Motor Maintenance**—Bulletin 30, "The Care and Maintenance of Fractional Horsepower Motors" is aimed toward instructing the operator in the proper care of his motor in order to lengthen its life. The proper procedure for general cleaning and overhauling of the motor is explained fully as well as the most efficient methods for cleaning and replacing sleeve bearings, ball bearings and needle bearings. Care of gear units and lubrication of all parts are outlined. Illustrated with photographs, cutaway views and diagrams. *The Dumore Co., Racine, Wis.*

**Floating Lamp**—Light can be placed where you want it. Stays put without adjustment or locking. Can be raised, lowered, pushed or pulled. According to manufacturer, is the answer to efficient localized lighting, either fluorescent or incandescent, for greater economy and production. Indexed bulletin from *Dazor Manufacturing Co., 4485 Duncan Ave., St. Louis, Mo.*

**Airpainting**—FM9-42 describes manual air-painting equipment, listing 12 important features which, according to the manufacturer, make his product an outstanding high production airbrush. Contains illustrations, descriptions, specifications and prices. *Paasche Airbrush Co., 1909 Diversey Parkway, Chicago, Ill.*

**Hard-Facing Alloys**—"Industry's Weapon Against Wear," a 16-page illustrated bulletin describing properties and characteristics of various hard-facing alloys. Remainder of bulletin is devoted to applications of alloys in diversified industries. *Stoody Company, Whittier, Calif.*

**Aircraft Tools**—Catalog No. 4 illustrates and shows diagrams of a broad line of aircraft tools. Explains applications and gives specifications. *Products Engineering Co., 700 East Florence Ave., Los Angeles, Calif.*

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WESTERN INDUSTRY—March, 1943



# THE SHOWCASE

**Cleaning Machine**—Uses baskets for cleaning tiny bearings, small parts which are easy to damage and hard to replace. Additional baskets can be used so that when necessary, every group of parts cleaned may be kept separately until needed. When the work basket has been loaded with parts, it is snapped on to the motor shaft of the machine and lowered into a jar containing a cleaning solution. Basket is agitated centrifugally, rheostat controlled, and speed may be stepped up to 1000 R.P.M. After cleaning, basket is



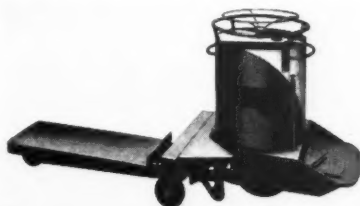
lifted above solution level and revolved to throw off excess fluid; then follows two more rinsings, second of which acts as a final degreaser and polishing agent. Drying is accomplished in a fourth chamber. *L. & R. Manufacturing Co., 55 Clinton St., Newark, N. J.*

**Powermatic Drive**—A simple, compact and economical power converter, transforming electrical energy into flexible efficient power for industry. Speed can be regulated instantly by increments of a fraction of an R.P.M. The slipless variation in speed provides infinite regulation over the



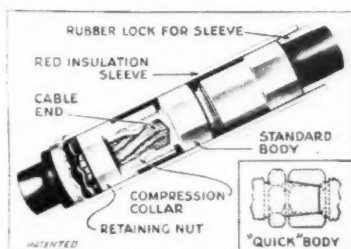
entire range without complicated mechanism or intricate electrical control. Bulletin available from *Powermatic Machine Co., 659 South Anderson St., Los Angeles, Calif.*

**Turret Trucks**—Features an exclusive articulated design which rides loads evenly over sharp dips, steep ramps and uneven travel surfaces. Loads are kept practically



level, eliminating dangers of spilling. Two features claimed are a fully automatic clutch and self-shifting, automatic transmission. Steering is done with the driving wheel which provides extreme maneuverability. Main frame of power plant is mounted rotatably in ball bearings which permit steering in any direction over a 360 degree arc. The power turret is a completely independent unit and is easily removable for servicing. *Nutting Truck and Caster Co., Faribault, Minn.*

**Solderless Connectors and Lugs**—The body of standard Cable-Tite connectors is one piece as shown in the large illustration. The "quick" models, recommended for use where the whip-end and main cables connect, have a two-piece body as shown in the

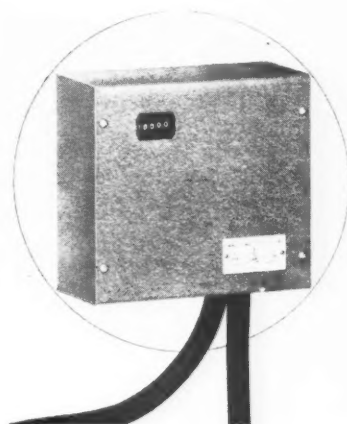


line drawing. A slight twist while connecting locks the body into one unit. Ease and speed of shop or field installation, com-

plete safety, full protection of cables and the conservation of vital materials are the principal advantages of these products. *National Cylinder Gas Co., 206 West Wacker Dr., Chicago, Ill.*

**Milling Cutter Fixture**—Positions milling-cutters, circular saws, gear cutters and many other cutters on the surface grinder, simplifying otherwise high-skill grinding operations. Manufacturer claims that any shopman can grind both the ends and sides of cutting edges in minutes compared to the weeks of delay formerly required on old methods. Adjusting rods permit quick-setting for proper angles. Literature available from *Acro Tool & Die Works, Dept. S11, 5324 No. Kedzie Ave., Chicago, Ill.*

**Arc-Time Totalizer**—Gives an accurate and inexpensive check on production by recording the cumulative time actual weld-



ing is being done. This is recorded in tenths of hours on a scale which gives a reading up to 9999.9 hours. Instrument is mounted in a small compact steel box which can be attached to welding motor-generator sets. Shipyards find it useful in providing accurate data for production  
(Concluded on next page)



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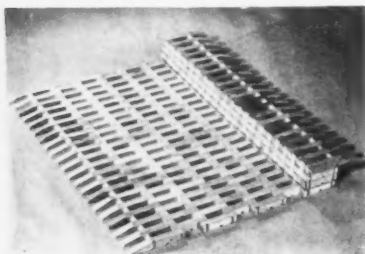
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control and better utilization of equipment, as well as giving a basis for bonus pay to welders. *Hewlett-Packard Co., Palo Alto, Calif.*

**Floor Patch**—Applied in the midst of traffic. No delay or mixing—sweep the hole, prime and shovel in Instant-Use resurfacer and tamp it. It is durable, resilient and sparkproof. Holds tight to old con-



crete without the customary shipping, chopping, and breaking up of old surfaces. *Flexrock Co., 2374 Manning St., Philadelphia, Penn.*

**Flexible Mat**—Constructed of wood links, light in weight and can be rolled or folded up for easy handling and cleaning. Lying flat, it follows the contour of the floor. Affords safety underfoot, comfortable to stand on and allows good drainage.



Ends are beveled to reduce danger of tripping. Particularly applicable for use in factories, on oily and greasy floors and around machinery, according to *American Mat Corp., 1713 Adams St., Toledo, Ohio.*

**Gas Tank Cap**—A new aircraft gas tank cap assembly which differs primarily from types formerly available in that it is interchangeable so far as attachment to the tanks is concerned. Lugs for holding the



cap to the tank portion of the assembly are formed automatically during the stamping operations which eliminates considerable labor and welding. Also, flat stocks and deep-drawing can be taken from the flat sheets to form the tubular parts of the assembly. *Poulsen & Nardon, Inc., 2665 Leonis Blvd., Los Angeles, Calif.*

**Cable Splicing Holder**—Quick-adjusting, handles cable sizes from 1/16" to 7/32" without the use of adapters. The



thimble or bushing and cable are held in a firm position by using only two adjusting screws. A thimble holder adjusting screw gives direct contact to the self-seating thimble socket. Turning the thumb screw instantly places the splicing holder in a rotating or rigid position. *Patrick-McDermott & Co., 2704 So. Hill St., Los Angeles, Calif.*

• **Mag-Na-Flo Flux**—Suitable for gas welding all alloys of magnesium whether

## INDEX TO ADVERTISERS In This Issue . . .

Advertiser	Page
Albina Engine & Machine Works, Inc.	30
Alvo Nut & Bolt Company	42
Associated Indemnity Corp.	36
California Barrel Company, Ltd.	3rd Cover
Carlton Hotel	40
Chain Belt Company	4
Clift Hotel	40
Crocker First Nat'l Bank	31
Cunningham Steel Foundry	42
Daniels, C. R., Inc.	31
Downs Crane & Hoist Company	37
Durant Manufacturing Company	37
Fishstrom Staple Company	34
Fiske Bros. Refining Company	6
General Electric Company	5
Jeffries Transformer Company	38
Johnston, A. P., Company	39
Larkin-Powell Company	42
Littlejohn-Reuland Corp.	38
McCarty Company, The	32
Oakite Products, Inc.	36
Pacific Gear Works	21
Reliable Electric Works	38
Santa Barbara Biltmore Hotel	27
Scientific Lubricants Co.	33
Standard Oil Co. of California	25
Stauffer Chemical Company	35
Stephens-Adamson Mfg. Co.	Back Cover
St. Francis Hotel	28
Timber Engineering Company	8
Turco Products, Inc.	31
Victor Equipment Company	2nd Cover
Wells Fargo & Union Trust Co.	27
Wickwire-Spencer Steel Company	7

sheet or extrusions. Manufacturer suggests product be mixed to a thin paste by pouring flux slowly into water while stirring. For best results, metal to be welded should be painted first with flux. *Park Stewart, 1063 Carbis St., Worthington, Penn.*



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Page

30

42

36

Cover

40

4

40

31

42

31

37

37

34

6

5

38

39

42

38

32

36

21

38

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